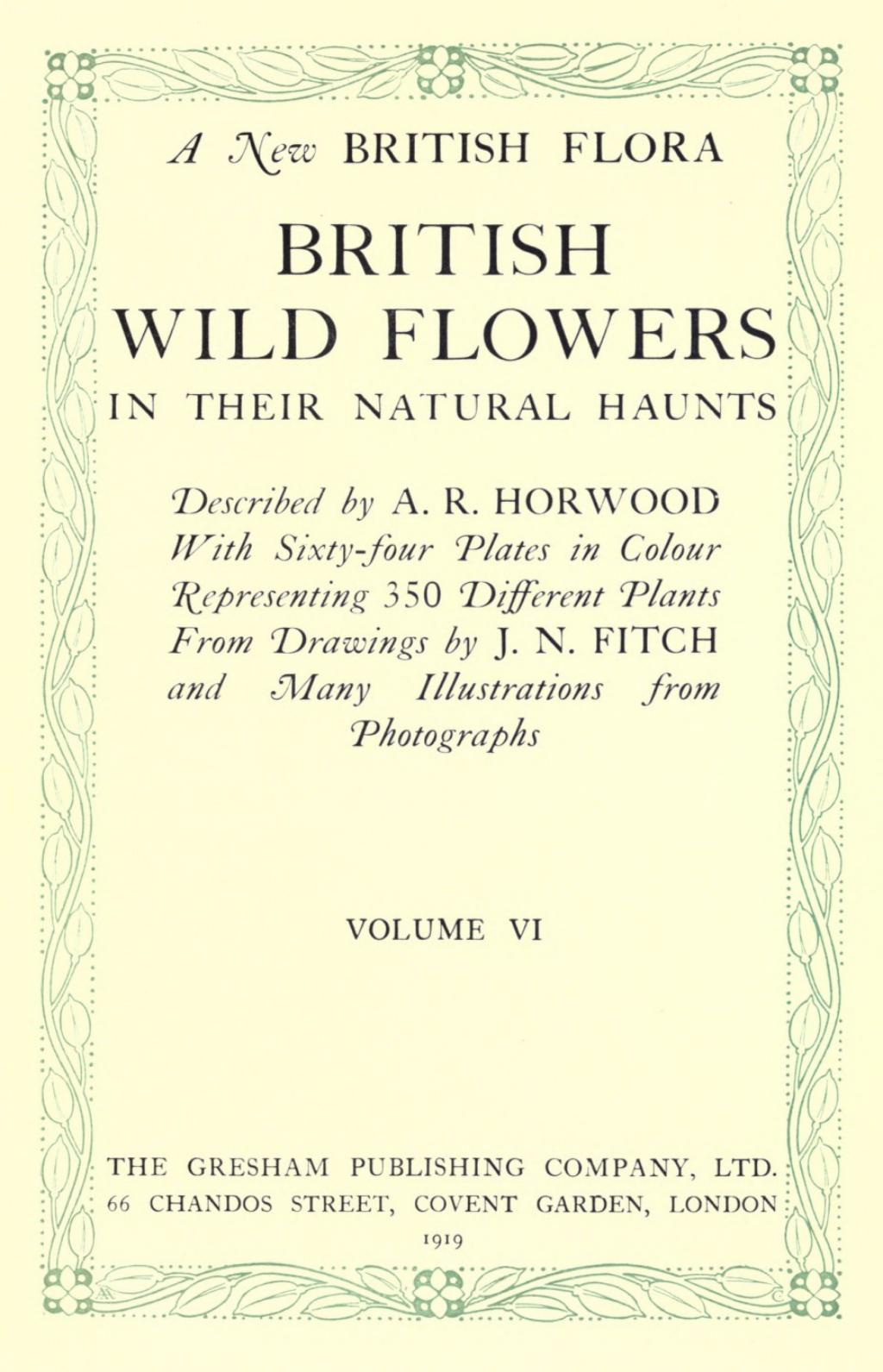


BRITISH • WILD • FLOWERS
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BRITISH WILD FLOWERS



A New BRITISH FLORA
BRITISH
WILD FLOWERS
IN THEIR NATURAL HAUNTS

*Described by A. R. HORWOOD
With Sixty-four Plates in Colour
Representing 350 Different Plants
From Drawings by J. N. FITCH
and Many Illustrations from
Photographs*

VOLUME VI

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INTRODUCTION

In this volume are included the remaining British species not described in Vols. II-V. They are also arranged in systematic order under each section based on broad ecological lines. To assist in the identification of plants in this and preceding volumes, a summary, first, of the natural orders and, secondly, of the genera is given in Vol. V. But, the work not being primarily intended to define the systematic characters of plants, reference to a work with analytical keys, such as Bentham and Hooker, may be made for that purpose. In the introduction to this volume some remarks are appended upon:

- (a) The composition of the British flora.
- (b) Status of some Britannic plants.
- (c) Some further notes on species and varieties.
- (d) Hybrids.
- (e) Identification of species.
- (f) Nomenclature.

The composition of the British Flora, as at present understood, may be best gathered by a study of Mr. Druce's *British Plant List*, which is very comprehensive, so that there is no danger of erring on the side of under-estimation.

In this list are included 2958 flowering plants, excluding Gymnosperms and Cryptogams. Since it was published many more have since been added.¹

Of native or well-established species there are some 1759. These, including some Gymnosperms and Cryptogams not embraced in that number, are made up as follows:

Native species	...	...	...	...	...	1390
Sub-species	...	...	...	...	...	401
Species doubtfully native	...	...	...	...	...	89
						<u>1880</u>
Alien species now well established	...	...	...	...	...	144
Aliens more or less fugitive...	...	...	...	...	...	940
						<u>1084</u>

This includes 5 extinct species and 5 others doubtful. There are 1430 varieties and 259 hybrids, over and above 23 not included in these numbers.

Of the aliens 751 are natives of Europe,

102	„	„	Asia,
23	„	„	Africa,
162	„	„	America,
6	„	„	Australasia,
30	are cultivated (in many cases natives of Asia and Africa).		

¹ See *Adventive Flora of Tweedside* and Mr. Druce's *Alien Flora*.

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As regards duration, there are 52 British trees, 210 shrubs (129 being Rubi or Brambles), 7 climbing shrubs, 1020 perennials (130 being Hieracia), 76 biennials, 350 annuals (25 being Characeæ (Cryptogams)).

In this work all or most of the truly native plants are included, save varieties and forms; also the better-established aliens, colonists, and denizens. The newer aliens and a few doubtful species are not described.

In the *London Catalogue of British Plants*, Edition 10, 1908, the number of species enumerated is 1977, including some colonists, denizens, and aliens. Professor Henslow's *Catalogue of British Plants*, 1835, gave the number as 1381 species (native), 57 naturalized, 56 doubtful, or 1494; and the varieties as 1650 (native), 62 naturalized, and 58 doubtful.

From these totals it may be gathered what advance has been made during the last half-century or more in the domain of British systematic botany. Between the totals given by Henslow and Druce there is a difference of some six hundred species, let alone varieties. Such increase may be due to several causes, of which the main are:

- (a) Division of aggregates into segregates.
- (b) More systematic exploration of the flora, county by county.
- (c) Annual introduction of plants from elsewhere.
- (d) Better knowledge of species and varieties.

It is necessary to define the accepted terms used to differentiate between the status of different plants, and for this purpose no better definitions can be had than those proposed by Watson, the pioneer of British plant geography.

Watson used six grades to distinguish plant-nativeness or other degrees of status, of which the first four are universally accepted.

1. NATIVE.¹—Apparently an aboriginal British species; there being little or no reason for supposing it to have been introduced by human agency. Examples: *Corylus*, *Calluna*, *Bellis*, *Teesdalia*.

2. DENIZEN.—At present maintaining its habitats, as if a native, without the aid of man, yet liable to some suspicion of having been originally introduced. Examples: *Aconitum*, *Paeonia*, *Viola odorata*, *Impatiens noli-me-tangere*.

3. COLONIST.—A weed of cultivated land or about houses, and seldom found except in places where the ground has been adapted for its production by the operations of man; with some tendency, however, to appear also on shores, landslips, &c. Examples: *Adonis*, *Papaver*, *Agrostemma*, *Melilotus*.

4. ALIEN (OR CASUAL).—Now more or less established, but either presumed or certainly known to have been originally introduced from other countries. Examples: *Sempervivum*, *Mimulus*, *Hesperis*, *Camelina*.

5. INCOGNITA.—Reported as British, but requiring confirmation as such. Some of these have been reported through mistakes of the species, as *Ranunculus gramineus*. Others may have been really seen in the character of temporary stragglers from gardens, as *Gentiana acaulis*. Others cannot now be found in the localities published for them, as *Tussilago alpina* and other species reported by or from Mr. George Don; though it is not improbable that some of these may yet be found again. A few may have existed for a time, and become extinct, as *Echinophora spinosa*.

6. HIBERNIAN (OR SARNIAN).—Native, or apparently so, in Ireland, or in the Channel Isles, though not found in Britain proper. It is obvious that, in so

¹ Of endemic species (confined to the British Isles) it has hitherto been considered that only some 147 species can be regarded as such, mainly Rubi and Hieracia.

peculiarly situated a group of islands as the British Isles, the flora must be very varied. The world trade of the British Isles brings to us many aliens, and the migration of birds, the lines of which lie across these areas, is responsible for the occurrence of many plants here that grow in far-distant regions; and, similarly, the Gulf Stream and prevalent winds may be the deciding factors in other cases.

As to the general character of the flora and the status of many species, and the occurrence of endemic species, Mr. Druce in his report of the floristic results of the International Phytogeographical Excursion, 1912, writes: "Whereas many leading British systematists have been extremely reluctant to acknowledge that the British Isles contained endemic species . . . yet, as one would expect, a more minute and critical study of plant forms . . . has led to well-marked differences being established between many of our island species and their homologues on the mainland of Europe". Referring to some remarks by Dr. Graebner, on the difference between British and Continental forms of *Sedum acre* (the British type is distinguished as *Sedum Drucei*), Mr. Druce adds: "This statement is borne out by one's own experience; one sees that the common species of Jersey have a different facies from those of our Midlands, while those of the north Scottish coast possess a distinct individuality from those of Devon and Kent. But it is only exceptionally that specific distinctions can be found. This range of variation, differing necessarily in degree, however, suggests that we may be unwise when working with critical forms to attempt to identify the microspecies of *Geranium*, *Erodium*, the *Melanium Violas*, and the critical species of *Rosea*, *Euphrasiæ*, *Hieracia*, and *Taraxaci*, with Continental names. In many cases I strongly suspect that the British plants are sufficiently distinct to warrant them being described and named. Indeed, as will be seen, two of our British plants, *Erigeron alpinus* and *Melampyrum pratense*, should bear, Dr. Ostenfeld suggests, other names. And, if evolution be a fact, we might be prepared to expect that these plants, living for so long under different climatal conditions and geographical position, should have evolved a facies of their own."

The influence of man over the character of the present flora has been emphasized in previous volumes. His relation to the status of plants, as defined by Watson, has been ably defined by the Rev. E. A. Woodruffe-Peacock in *Natural Habitats and Nateness*, where he writes: "In relation to man as a predominating factor in the botanical problem, all we have to set ourselves to disentangle is, 'what is permanent, and what is transitory?' The former is natural, the latter accidental, semi-alien, or alien. No other criterion appears to be possible. It has the advantage of being simple and practical. It may be difficult to say whether a given species is 'native, denizen, colonist, or casual' under a certain environment, but it is easy enough to ascertain whether it is permanent or transitory. It is not difficult to demonstrate whether a plant is found in the majority of fitting situations, or whether it is peculiar to one locality, or at most a few, under suspicious circumstances, under the same conditions of growth.

"To help in this respect, and to escape from the difficulties and perplexities of the Watsonian system of terminology, I propose to class all species into various categories, as they stand in an intimate or more distant relation to man and his undertakings. Their position in a category or categories will at once settle their status. Samples only can be given here: Followers (1) of man, (2) of cultivation, (3) of commerce. Frequenters (1) of broken ground, (2) of waste ground, (3) of pasture, (4) of meadow, (5) of woodland, (6) of roadside hedges, (7) of field hedges, (8) of lakes, (9) of ditches, &c., are much more simply applied, even though the phrase lacks the sweet simplicity of the Watsonian word. Both should contain a

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distinct idea, or set of circumstances; unfortunately, in practice, this is what Watson's words do not express."

A further feature in the occurrence of plants of transitory type lies in the necessity of absence of competition which determines the floral cycle of a piece of ground. The last writer indeed says: "A very little observation, properly directed, will soon convince any unprejudiced mind, that freedom from competition is the chief influencing cause of the appearance of annuals and biennials on freshly moved soils. It settles the question of the duration of their stay; and everywhere, under natural and artificial conditions alike, freedom from competition is the most potent influence in the distribution of transitory species.

"Man acts as a disturber of the floral cycles of nature, as a clearer and mover of the ground, as an interrupter of competition, as a finder of elbow-room for annuals, biennials, and the less powerful perennials. Directly or indirectly his influence is felt in many other ways as a modifying force. Some have hardly been fully appreciated yet. The one special manner in which every human being, by his actions or through his wants, influences plant life, is as an aider and abettor of the weaklings of our flora in their struggle for existence."

Whilst most of the alien plants found in the British Isles colonize ground which differs from their natural habitat in their country of origin, some may establish themselves here in closely similar habitats. In Mr. S. T. Dunn's *Alien Flora of Britain*, the natural habitat of the species is given, but some of the plants included in this work may, as the Rev. E. S. Marshall points out (*The Status of Some Britannic Plants*), be regarded as native in this country. The latter rightly emphasizes the importance of correctly defining the width of meaning to be attached to the somewhat loose term "waste places", and considers that in this we should include village greens, rubbish heaps, unoccupied land near towns and villages, and sandy commons, sea-shores, &c. The actual geographical distribution in Europe of many species is complicated also by the existence of outliers.

Of plants regarded as alien by Dunn, Mr. Marshall would exclude, among others: *Aconitum Napellus*, possibly *Paeonia corallina* (though Mr. Druce thinks it is not native), *Lepidium Smithii*, *Sisymbrium Sophia*, *Viola tricolor*, *Cerastium arvense*, *Malva rotundifolia* (near the sea), *Geranium pusillum*, *Medicago minima*, *Vicia lutea*, *Prunus insititia*, *Ribes Grossularia* (in Yorkshire), *Cotyledon Umbilicus*, *Ægopodium Podagraria*, *Anthriscus vulgaris* (on the coast), *Sherardia arvensis*, *Artemisia Absinthium*, *Chrysanthemum Parthenium*, *Lactuca Scariola*, *Matricaria inodora* (vars.), *Sonchus arvensis* (seashores), *Hyoscyamus niger* (in woods), *Veronica arvensis*, *Ajuga Chamaepitys*, *Atriplex patula* (by slow streams), *Chenopodium album* (in marshes), *Rumex pulcher* (on the coast), *Parietaria officinalis* (on rocks and cliffs), *Galanthus nivalis* (especially in the west), *Apera interrupta*.

These are but a few of the plants whose nativeness has been questioned, that may be regarded as indigenous. It is important to remember that a plant may be native in one situation and casual in others. Thus it is necessary to make a careful rock-soil analysis of records of each species, and to determine where and when it is permanent, and when transitory.

In considering the meaning of the terms species, varieties, &c., it is necessary to admit the influence, not only of the *inherent tendency to vary*, but also of such physiological factors as *pollination* (whether self-pollination or cross-pollination), and of factors such as soil or climate.

Variation in some genera, even in the British Flora, is extremely marked, and whilst the normal number of species in a genus is four or five, there are some genera that include as many as 100 species (or sub-species or races).

The whole problem centres around the interpretation of terms, and the value attached to each. But whatever value be attached, the underlying causes remain. The multiplication of forms may in some cases, as in Willowherbs, Willows, &c., be due to hybridization, in others to the normal causes of variation.

When a species is not adapted to cross-pollination, but is self-pollinated, and produces a larger range of forms, they are not the result of natural selection, but rather, as De Vries explains in regard to such mutations, or species in the making, due to the production of mutants in the early history of the plant, differing in one or more characters from the type, and perpetuated by the addiction of the plant to self-pollination. By degrees the creation of small variations from the original will bring about great divergence between the parent stock and the latest mutants, until the extreme forms may rightly be considered distinct species, especially if the connecting forms have failed to survive. Much then depends, in our conception of species, upon the survival of intermediates, or the reverse. The existence of natural selection, indeed, largely hinges upon the occurrence of such a phenomenon as survival, or the reverse, or in other words of adaptations to meet special conditions.

Different from continuous variations are those produced by a change in the environment. Such small continuous variations were emphasized by Darwin as being advantageous and in the struggle for existence liable to be selected, other plants which do not possess them not surviving. The extremes survive, hence the difficulty experienced in tracing the evolution of species owing to the disappearance of connecting forms.

So far as the results of artificial selection go, in the cultivation of species, Jolannsen has not found that divergent forms arise; the usual result is the production of a pure line with a higher average weight of seed (the special character experimented with), and beyond this no great variation occurs.

But there are other variations of kind rather than degree, and one obtains sports (as in the case of white flowers), discontinuous variations, or mutations. According to Darwin such sports or mutations are rare. His experience is in direct opposition to that of De Vries, who worked upon *Oenothera*, the parent plant of his mutants being, however, of doubtful nature. Whether mutations are frequent or not, species may arise suddenly. Owing to the influence of cross-pollination, indeed, it is natural that mutants should, once originated, be quickly altered, and their origin obscured, by the influence of crossing, which is, as a rule, the prevalent type of pollination. Mutations would also become crossed with typical forms, and rare mutants would be eliminated.

Self-pollination would, on the contrary, help to perpetuate mutations, and the rarer, more extreme form of pollination, or cleistogamy, whereby outside influence of insect visitors is entirely excluded, would have the effect of establishing any mutations that could arise and in due course of producing plants entitled to rank as sub-species, or even new species.

There is in general a tendency in plants to preserve specific identity, given uniform conditions of growth. The plant itself has a tendency to avoid variation as a rule, a fact reflected in the prepotency of pollen or the readiness with which one individual of a species is crossed with another of the same species, rather than with that of another species, or even genus. Also like individuals of the same species are more likely to be crossed than dissimilar individuals. This tendency is, however, discounted by the erratic conduct of the agents that effect cross-pollination, namely insects, though it has been shown by Lord Avebury that, as a rule, insects have a marked preference for visiting plants of the same species in their wanderings to and fro in search of pollen or honey. But, apart from colour and form of flower,

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insects are not, we must assume, to be credited with the power of discrimination between forms differing in other respects, where those features do not affect their search for the above items of food.

The relative scarcity of impure crosses or hybrids shows how unerring is the instinct of insects. Hybrids, as distinct from species and varieties, are not the main links in the chain of evolution of species. They are exceptional illustrations of the influence of cross-pollination in the production of new forms. Incidentally they may be the origin of new species, but they illustrate the manner in which species or varieties may occur, since they are the results of the same process which brings about evolution of forms in one direction, by cross-pollination. Mutations, &c., produced in self-fertile plants are illustrations of a similar process of evolution brought about by other means, and due presumably to the inherent tendency to vary (where variation occurs), which is obscured somewhat in crossed plants by the influence of the different characters of the parents in a cross-pollinated plant, or, at any rate, the possibility of their difference, since *distance* may in such cases be responsible for variation in the two individuals crossed, whereas in self-pollination no such difference exists, and the plant is grown under *similar* conditions.

At one time it was considered hybrids were rare, and generally sterile. A Frenchman, Naudin, disproved this, and found many hybrids capable of fertilization.

It was reserved for the Austrian monk, Gregor Mendel, to explain and express arithmetically the principles of hybridity. He found the result of crossing two different forms was not the production of intermediates, but of plants with the characters of one of the parents. Wrinkled and smooth-seeded peas when crossed produced hybrids with round peas in the first generation, and he termed the round-pea type a dominant, whilst the other type was recessive. The hybrid, when pollinated with its own pollen, in the second or F_2 generation, produced some plants with round, some with wrinkled peas, in the proportion of 3 to 1; i.e. a quarter of the descendants of a generation revert back to the original with a recessive character. The actual result in the first generation may be of an intermediate type, and in the F_2 generation some of both characters of the parents, and some intermediates, will occur. The resultant hybrid may appear to be intermediate, when really the result is a combination of two dominant characters giving the semblance only of an intermediate. These principles can be readily worked out where the parent plants do not present a complex of characters each of which is likely to influence the resulting hybrid. In such cases the elimination of each character separately is the only means of determining the nature of the parents in a first cross, and it becomes more difficult in a second or third cross.

Amongst British wild plants some genera are more liable to hybridize than others. Exactly which are species and which are hybrids, indeed, is not certainly known. Willow hybrids are generally fertile, and have been universally accepted as such. Many so-called species of *Mentha* are sterile hybrids, and are largely reproduced by suckers. It is also not clear whether some genera do not include some hybrids that are usually sterile and others that are fertile. Formerly hybrid varieties were held to be fertile, hybrid species sterile, but this view needs some modification to-day.

Amongst British genera hybrids occur, e.g. in *Ranunculus*, *Papaver*, *Cardamine*, *Helianthemum*, *Viola*, *Silene*, *Lychnis*, *Hypericum*, *Medicago*, *Rubus*, *Geum*, *Rosa*, *Drosera*, *Epilobium*, *Galium*, *Erigeron*, *Senecio*, *Carduus*, *Hieracium*, *Vaccinium*, *Erica*, *Limonium*, *Primula*, *Gentiana*, *Pulmonaria*, *Verbascum*, *Linaria*, *Euphrasia*, *Mentha*, *Lamium*, *Polygonum*, *Rumex*, *Daphne*, *Betula*, *Ulmus*, *Quercus*, *Salix*,

Populus, Orchis, Ophrys, Juncus, Potamogeton, Scirpus, Carex, Alopecurus, Poa, Festuca, Lolium, Agropyron.

One of the greatest cruxes the beginner has to face in studying British plants is how to name his specimens. Identification, in a word, is a great bugbear to many a young student. As a matter of fact, a good deal of preliminary botanical work is required before identification should be attempted. Unfortunately this is hardly realized by nine out of ten whose ambition it is to acquire a knowledge of the British Flora. Consequently the accomplishment of this ideal spreads itself over a far longer period than if a solid basis of botanical knowledge had been gained beforehand. Probably very few British botanists have been able to acquire an intimate knowledge of the flora without a ten years' acquaintance with plants in the field—or otherwise. But this fact should not deter anyone.

It seems to the author that the following plan of study is essential to a proper knowledge of British plants, though there is no royal road to success, and what applies in one case may not in another.

In the first place, every aspiring systematic botanist should make himself master of a general knowledge of botany. For this purpose he can attend classes or receive help from a special tutor in the subject. Except in a science course, either at school or college, botany is not taught; and the grown-up person who would be a botanist, especially if resident in the country, is somewhat at a disadvantage. For unaided study the only method is to obtain the best textbooks, and to follow out the work gradually, doing as much practical work as possible, and experimenting as often as the call arises.

An elementary textbook may be chosen to begin with, such as Evans's *Botany for Beginners*. Botany is divided into:

Morphology, the study of form and structure of organs (which includes anatomy, dealing with gross, and histology, dealing with minute structure).

Physiology, dealing with the function of organs and their relation to form and structure; and especially with the activities of the plant, such as nutrition, movement, growth, and reproduction.

Classification (taxonomy, systematic botany), or the study of the relationship of plants, their arrangement or order.

Other branches are *Ecology*, the study of the habitat of the plant and its life-history; geographical economic botany, diseases of plants, &c.¹

As a matter of fact, a special knowledge of morphology is required. Each set of main organs should be carefully studied as root, stem, leaves, flowers, fruit, and seeds, especially the last three. The terms applied to the different types of each should be learnt by means of actual examples or specimens where possible. The relation of one part to the other should be studied, also the order of development, mode of insertion, cohesion, &c.

Floral structure is perhaps the most important, and with this study should be combined some knowledge of the physiology of pollination and fertilization, and in the case of fruits and seeds of maturation, in order properly to understand the form of the flower, and the nature of the ovule and its structure, and development, as also that of the seed. For upon the character of flower, fruit, and seed the most important distinctions applied in classification, whether of orders, genera, or species, are based.

Supplementary to the foregoing, but really part of their subject-matter, is the study of a glossary or the terminology used in botany for the description of parts, whether in general or as applied to special parts. No glossary should be learnt

¹ For more advanced textbooks, see Bibliography.

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or terminology acquired, however, without comparison between the terms employed and the parts they define in actual specimens if it is possible to obtain them. When the mysteries of botanical terminology have been overcome, an attempt may then be made to describe plants on an approved plan.

For this purpose the knowledge already acquired as to the parts of a plant will be of the greatest value. For a description must be framed upon a systematic plan, and the different parts should be described in the order of their development. The main heads should be: Habit, root, stem, leaves, inflorescence, bracts, flowers, calyx; corolla, andrœcium, gynæcium, ovules, followed by a floral formula and diagram. (See *post.*)

The following is an example:—

Habit.—Erect, perennial, herbaceous, rosette plant.

Root.—Fibrous.

Stem.—Aerial stem a scape, leafless.

Leaves.—Radical, in whorl, simple, inversely ovate to spoon-shaped, stalked, fleshy, blunt, midrib broad, no stipules.

Inflorescence.—Indefinite, capitulum.

Bracts.—In 1–2 series, herbaceous, green, blunt, tipped with black, in an involucle.

Flower.—Incomplete, perfect; actinomorphic, tubular in disk florets; incomplete, imperfect, zygomorphic; ligulate in ray florets.

Calyx.—None.

Corolla.—Tubular florets gamopetalous, 5-lobed, epigynous, yellow; ligulate florets, gamopetalous, 3-lobed, epigynous, ligule white.

Andrœcium.—In disk florets only, syngenesious, 5, epipetalous, anther-cells simple.

Gynæcium.—In ray and disk florets syncarpous, carpels 2, inferior, style 2-fid, arms linear blunt in ray florets, in disk florets short, thick, tipped with papillose cones, ovary 1-celled.

Fruit.—An achene, flattened, inversely ovate, 1-seeded.

Floral formula.—K(5 – o), C(5), A(5), G($\frac{1}{2}$).

Floral diagram.—(Disk floret).



Classification—Order Compositæ
Name—*Bellis perennis* (Common Daisy)

Floral formulae are designed to show graphically or in abbreviated form the structure of the flower. For this purpose capital initial letters indicate the part of the flower, thus: K = calyx, C = corolla, A = andrœcium, G = gynæcium. Numerals indicate the number of parts, and ∞ means indefinite. If there are two whorls in any part the + sign is used. Union of parts is shown by (), and adhesion of parts by []. Superior parts are shown by a line — below the figure, and inferior by a line — above (see formula above).

A floral diagram represents the same structure more graphically still. A flower is taken, and the parts are outlined as if seen in transverse section to show their number and relation to each other. The bract is shown in its relative position

subtending the flower, as well as bracteoles, and also the axis upon which the flower is borne.

A vertical section of the flower may also be drawn, in which the floral organs are sketched more or less naturally.

Classification of a plant may follow the description. Such work is preliminary to a knowledge of the unit of classification, the species. Flowering plants, according to the Natural System, are called Phanerogams.

This major division includes:

Angiosperms—Ovules enclosed in an ovary.

Gymnosperms—Ovules not enclosed in an ovary.

The only native British Gymnosperms are Pine, Yew, Juniper.

The Angiosperms include:

Dicotyledons—2 cotyledons, leaves net-veined, vascular bundles open.

Floral organs in fives, fours, or twos.

Monocotyledons—1 cotyledon, parallel-veined leaves, vascular bundles closed, scattered. Floral organs in threes or multiples thereof.

Dicotyledons and Monocotyledons are subdivided into several sub-classes, and the latter into about ninety natural orders or families (described in Vol. V). It is more difficult to acquire at once a knowledge of these on account of their number, but it should not be difficult even for the tyro to master empirically the characters of many of them without any actual acquaintance with the essential scientific characters of the order. Thus the order Ranunculaceæ is not easily confused with many others (save perhaps Cistaceæ or Rosaceæ) owing to its distinct petals (and sepals) and hypogynous stamens. In Rosaceæ the calyx is gamosepalous, and the stamens perigynous or epigynous. The order Cruciferæ, with 4 petals arranged in cruciform order, is fairly well marked, and has uniformly 4 long and 2 short stamens. The Umbelliferæ have a characteristic umbellate inflorescence, 5 sepals, petals, and stamens, and an unmistakable fruit, a schizocarp, of 2 mericarps.

It is a good plan to master a few orders at a time, and then by a process of elimination the reference of a plant to its natural order becomes less difficult.

More troublesome is the knowledge of genera, the next stage in the classification of plants. Of these the British Flora contains over 500, hence a proper knowledge of these must take time. For a description of these see the summary following that of the natural orders (Vol. V). The relationship of the various divisions and lower grades of classification of plants has already been defined in Vol. I, in the preliminary remarks prefacing the analytical summary.

In studying these different groups one must again emphasize the need for learning their meaning with *specimens* always, where possible, beside them.

When the species is being studied, in a genus consisting of more than one species (as is usually the case), this becomes most difficult. One must then make use of a good flora (as to which see advice given below).

In studying plants it is almost essential to dissect the specimens to be examined. This at once gives an insight into the structure and the composition of a flower, the part especially important in classification. For this purpose should be procured a knife for cutting sections through a structure. For laying out or separating the parts of a flower, one or two teasers or needles mounted in a match or similar handle are required. A pair of fine-pointed scissors may be used for cutting out fine structures where a knife would be too clumsy. In order, when the various

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parts are dissected, to keep them flat when laid out on a sheet of paper, glass squares may be used as weights. To fasten the parts down when arranged as in a diagram, one may use gum, water, or other adhesive, or pins.

Small structures may be studied by means of a hand-lens, and a microscope is necessary to examine pollen and small sections, the presence of very small hairs, glands, stomata, crystals, &c.

For lifting very small objects a pin dipped in water or a pair of forceps may be used.

Sketching materials may be employed to draw the flower before dissection, from one or more aspects, as well as after. Painting of the flower to show colour is to be encouraged. Sections, vertical and otherwise, of the flower should be drawn. For these purposes one needs a good Whatman drawing-block, or sketch-book, pencils (H., H.B., &c.), and a box of good water-colour paints.

In endeavouring to progress at this stage in the identification of species, two plans may be adopted, one preliminary to the other. One may first proceed from the known to the unknown. Taking a number of field specimens, gathered fresh or herbarium material, of plants known by their English names, study them, write their description, after dissection, &c. Take a flora, in the index look up the English name, and turn to the page where the plant is described. There one will learn its Latin names, discover the natural order and other groupings. Some knowledge is thus gained of the species, genus, natural order, sub-class, class, and one's own description may be compared with that of the flora. If desired, other works can be consulted in the same way, and as much learnt about the plant as possible. It should not after some practice thereafter be difficult to recognize other (unknown) plants of the same genus, order, &c., and to refer them to their proper groups.

And indeed this naturally leads up to the next plan, and that is to collect or examine any fresh or dried specimen unknown to one, and by aid of the knowledge already gained to refer it to its genus, order, &c., and then to the species. If the first plan is carried out on systematic lines, by taking a common plant of each natural order (there are 90 odd British orders, and at least 300 or 400 well-known common plants, so there is plenty of scope for choice), then the reference to the natural order should not be difficult, assuming some knowledge already of orders, genera, &c., as advised previously. The whole plan of this work, apart from its ecological basis, is to help the beginner with this end in view. The large number of beginners who, foiled in their early attempts, give up systematic botany in despair may indeed provide ample reason for the production of this work, apart from its other, and, I trust, not less laudable objects, which have been followed out in response to a widespread demand.

Having followed the two plans suggested for making progress in identification, the botanist, as he or she may now be termed, having gone through a preliminary botanical course, may take more definite steps to name species. A method largely in vogue is to run down the species by a process of elimination, by aid of the various analytical keys to orders, genera, and finally species, to be found in many floras which describe the whole, or most, of the British Flora. Bentham and Hooker's work for this purpose is invaluable, and another and more modern work is Babington's *Manual*, where, however, the analytic key stops at genera, as do many others. For readily identifying species, Druce's edition of Hayward's *Botanist's Pocket-book* is invaluable. The specific characters are brief and therefore easy to compare. The method of using a key is well explained in Bentham and Hooker's *Handbook of the British Flora*, and the student may be referred to it. Other larger works, to be used later, which have also analytical keys to genera, and sometimes to species, are

given in the Bibliography. Until the student is well advanced, Bentham and Hooker will however suffice. Finally, so far as identification goes, there remains the process of comparison with descriptions of species in any of the standard floras, such as the above, perhaps a more natural method than the arbitrary use of analytical keys, which are artificial.

Though not to be recommended in the first resort, comparison with figures may be advised where descriptions, as too often happens, lack the power of expression of the meaning of differences or separate characters. Only an illustration or specimen can properly convey an idea of size, colour, relation of parts, habit, and form-structure *as a whole*.

For the same reason that illustrations are more helpful than descriptions, especially in the case of closely-allied species, comparison with herbarium specimens may be recommended.

In each case comparison should follow, not precede or replace, an effort to identify a plant by means of descriptions or the use of a key.

Not until the botanist has made some progress in the identification of plants, and has gained some confidence, will he, if wise, undertake definite survey work on any extensive scale. When, however, the time has come to study any particular area, say a county, it will be of interest to discover the distribution of the plants observed. For a single county the county flora will suffice to give the desired information, and any plant found, which is not included in that work, or a supplement to it, will constitute a new county record (N.C.R.), and proud will be the botanist, in a well-worked area, if he or she can make any noteworthy additions to the list. If the flora is an old one this will not be so difficult for such critical genera as *Rubus* or *Hieracium*; for the older botanists only knew the aggregate species, and were unacquainted with the new segregates; and, as has been seen, since 1835 some 600 species have been added to the British plant list.

If, moreover, the botanist elects to travel about and to botanize in a number of counties, it will be more difficult to discover if a plant is new to any particular district or not, without some knowledge of distribution generally.

In Vol. I some general remarks have been given upon distribution, and a summary and map of the botanical districts or vice-counties into which the country was divided by H. C. Watson. The latter was indeed the pioneer of plant geography in this country. His *Topographical Botany* is a summary of the flora of each county, and to this work, and his other works, everyone interested in this branch of botany must turn. The data given in Vol. II-V as to distribution are based upon this and other works quoted below. Watson's *Topographical Botany*, 3rd Edition, with the supplement compiled by Mr. Arthur Bennett, extends to 1903. Additions since that date are to be found in the *Reports of the Botanical Society and Exchange Club of the British Isles*, edited by Mr. G. C. Druce, or in the *Journal of Botany*; whilst if the flora of a county be a recent one, that work should include all recent additions up to the date of its publication.

For Ireland, R. L. Praeger's *Irish Topographical Botany* should be consulted. Three useful papers on Irish distribution have been published by the Rev. E. S. Marshall, viz. *Review of Irish Topographical Botany*, *On the Probable Status of some Irish Plants*, *Remarks on the Cybele Hibernica*. Ed. 2.

The distribution of Rubi in Great Britain is dealt with in a paper by the Rev. W. M. Rogers, 1902. *Comital Census Numbers*, by G. C. Druce, 1909, deals with the estimate of counties throughout the British Isles, where each species has been observed, as given in the *Oxford Plant List*. The *London Catalogue of British Plants* also cites the census numbers for each species.

INTRODUCTION

The distribution of plants in the British Isles is of interest from a broader point of view, viz. the European range of each species. According to their British range, Watson placed plants in groups, such as Germanic, Atlantic, &c., and these terms have been used to denote the general range of a species in relation to the Continent or their possible origin. There are divergent views as to the origin of the British Flora, as expounded by Dr. Clement Reid and Dr. Scharff (see Vol. I).

The range of our native species should, however, be studied in relation to that of the range on the Continent. The countries in which British species are found on the Continent or elsewhere are cited by Hooker in his various works, in the *Index Kewensis* and Supplements, and Nyman's *Sylloge*; and the various floras of each country give a more accurate idea of the range of each species. A comprehensive work upon the geographical distribution of plants remains to be written.

Perhaps the thorniest side of botany is that of nomenclature. Until a student is quite proficient, however, this side-branch of botany should be left severely alone. Even specialists in this department of botany differ widely in their choice of names and the mode of citing them. There does not exist a single textbook upon the subject at the present time, and the history and data of nomenclature are scattered through a vast number of separate works, periodicals, and papers, to which access is not always easily obtained. The amount of bibliographical work to be done in this branch of botany is enough to occupy the entire attention of a student, a fact which no doubt causes many an exponent of the subject to dogmatize where little or no practical acquaintance with the plant itself has been obtained. Hence it is not to be wondered at that the field botanist and the pure nomenclaturist are often at variance.

Some principles affecting the nomenclature of plants have been given in Vol. I. At the present time specific names date from 1753, the date of Linnaeus's *Species Plantarum*, and the rules of nomenclature follow the Vienna *Actes*, or International Rules, adopted in 1905 (see Vol. I).

In so far as British plants are concerned, the nomenclature used in the standard works, such as Hooker's *Students' Flora*, Babington's *Manual*, or F. N. Williams's *Prodromus Floræ Britannicae*, may suffice for the ordinary student. The history of the standard names or their synonyms, and dates of adoption, are given in the last, and some of the older works. The current names are given in Druce's *List of British Plants*, the *London Catalogue of British Plants*, and Rendle and Britten's *List of Seed Plants*.

Some useful papers upon nomenclature, touching the priority of names so far as a number of genera and species are concerned, have been written from time to time (e.g. Mr. G. E. Druce's papers *On the Nomenclature of British Plants* [1906-07]).

Further information will be found in the *Journal of Botany*, which is, in fact, largely concerned with nomenclature, and in the Reports of the Botanical Exchange Club of the British Isles and of the Watson Exchange Club.

So far as classification goes, changes are less frequent. Names may change often, but the order of arrangement of plants is less frequently altered.

For a good summary of this question in general, see Dr. A. B. Rendle's *The Classification of Flowering Plants*. Lindley's *Vegetable Kingdom* gives some details of the early classification. Sachs' *History of Botany*, Dr. J. R. Green's *History of Botany*, Mrs. Arber's *British Herbals* (Cambridge University Press), and Dr. Oliver's work in the same series all give details of famous botanists and their work, with some notes on classification. The classification used on the Continent is that of Engler and Prantl, which is summarized in Dr. Carter's

Genera of British Plants, and followed in the *Cambridge British Flora* (Vol. II only published) by Dr. Moss. (See also a review of this and works by other Continental botanists by the same writer as they affect the British Flora.) Warming's *Systematic Botany* is a general textbook of some value, with an appendix or summary of different systems by Dr. Ainsworth Davis.

The system followed in this country so far is that of Bentham and Hooker in *Genera Plantarum*.

In order to go into the question both of nomenclature and classification, upon which only hints can be given here without any discussion of either subject, the student must not confine his attention, however, only to British works, but must study foreign works, a selection of which only can be given. (*Vide Bibliography.*) The subject is so vast and difficult that it can only be referred to in this work. Fuller bibliographies are given in the works cited. Though not up-to-date as far as authorities and information go, two small works that may be useful, as giving the meaning of scientific names and a certain number of synonyms for species, are *Names and Synonyms of British Plants* by J. Egerton-Warburton, 1889, and *Botanical Names for English Readers* by R. H. Alcock, 1876.

Indispensable is *Index Kewensis* by B. D. Jackson, and Durand's Supplement. A handy pamphlet is *Index Abcedarius* by W. P. Hiern. Also useful are Pritzel's *Icones Plantarum*, Nyman's *Conspectus*, and De Candolle's *Prodromus*, as well as Just's *Botanischer Jahresbericht*.

In conclusion, it must ever be borne in mind that identification and correct naming, though the first essential steps towards the investigation of a plant, are nothing more. They constitute the indispensable means to a nobler end, namely, the inexhaustible study of the structure and activities of the organism, but can never be an end in themselves.

BRITISH FLORA

SUPPLEMENTARY TO VOLUMES II-V

FLOWERS OF THE FIELDS AND MEADOWS

[In this volume the remaining British species, not described in greater detail in Vols. II-V, are arranged according to their principal habitat. Some of the species might be included in more than one section, and, as the distribution of some is limited and the habitats are restricted, the choice of habitat in such cases is arbitrary. For convenience the large genera, such as *Rubus*, *Rosa*, *Hieracium*, *Salix*, and *Carex*, are very largely described under some one section in which a large number of the species would be rightly included. As far as possible all the British species are included, but in the case of the large number of "aliens" only the better-known ones are described. Recently defined segregates, as far as possible, are also dealt with.]

ORDER RANUNCULACEÆ

Creeping Buttercup (*Ranunculus repens*, L.).—This common buttercup is found in Arctic Europe, parts of Asia, Africa, and has been introduced into America. It is found in every part of the British Isles, up to nearly 3000 ft. in Scotland. The usual habitat is wet meadows, and almost every roadside ditch contains it, whilst moist open parts of woods also form a suitable spot for it. The habit is procumbent or trailing. The stem is provided with creeping stolts or underground runners, from an erect main stalk, with fibrous roots. It is usually found in patches for this reason. The essential characters are the furrowed flower stalk, and the erect sepals. The receptacle is hairy. The lower part of the stem is often purple. It is about a foot high, and is a perennial, flowering in May till August. The pollination is like that of the Upright Meadow Buttercup (q.v.). The seeds are dispersed like those of the latter. The soil is a loamy clay. The plant is poisonous, being bitter, causing blisters.

Bulbous Crowfoot (*Ranunculus bulbosus*, L.).—The range of this buttercup is the same as that of the Creeping Buttercup. It occurs in all but six of the counties of the British Isles. In some meadows this form is the dominant buttercup early in the year, studding the earth profusely with its golden cups. It is found indifferently in both meadows and pastures. The habit is of the rosette type. The stem is bulb-like at the base, the leaves are chiefly radical leaves, the stems erect. The flower-stalks are furrowed and smooth, the sepals turned back. It flowers in May, and is perennial. The plant is a foot high. The pollination and dispersal are as in the last, the anthers ripening first, the honey-glands being at the base of the petals. The plant is a sand-lover.

ORDER CRUCIFERÆ

Jersey Mustard (*Brassica adpressa*, Boiss.).—This plant is found in the Channel Islands, in Jersey, Alderney, when native, but is a casual elsewhere, and is confined to Europe. It grows in sandy fields. The habit is branched or pyramidal from below upwards. The stem bears few divided leaves, with the leaflets, larger at the extremity below, lance-shaped above. The chief distinction between this and others lies in the short beak of the pod with one seed, the pod being pressed close to the stem. It flowers in July and August, and is biennial. The seed-coat swells when wetted, helping to fix the seed in the ground when germinating.

Pepperwort (*Lepidium campestre*, Br.).—This Crucifer is found in most parts of the British Isles, and is distributed generally in Europe, parts of Asia, Africa, being in America only an introduction. The habitat is dry soil of a gravelly character, fields, waste places, and roadsides. The habit is erect. The stem is single, branched above only, with leaves of an arrow shape. The style between the paired valves is not longer than the notch, the pouch scaly, with a broad wing. The plant is as much as 1½ ft. high. Flowers may be found in June up to August. It requires a sandy or gravelly soil. The flowers are not attractive to insects, being diminutive. The pods open when ripe, letting the seeds fall close to the plant, which grows in clumps. Like other members of this group condiments are prepared from it.

ORDER CARYOPHYLLACEÆ

Proliferous Pink (*Dianthus prolifer*, L.).—This pretty plant is quite rare, being found, south of Perth, in only eight counties, and in the Channel

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Islands. It occurs also elsewhere as a casual. The habitat is pasture-land of a sandy or gravelly nature. It has an erect habit, the stem being simple. The flowers are borne in a cluster, and the scales of the calyx are membrane-like and almost transparent. The flowers are small, rose-coloured, and open singly. The plant may be as much as 18 in. in height, but is usually less. From June onwards it may be found in flower up till October, but is at its best in July. It is an annual. The anthers ripen first, and the flowers are pollinated by butterflies. The seeds are dispersed by the wind, the capsule having the censer type of structure, opening above. It is not sufficiently large to find a place in the garden.

Maiden Pink (*Dianthus deltoides*, L.).—Much commoner than the last, this pink is found in half of the counties, being a purely European species, whereas the last is found in Asia and has been introduced into the United States. The habitat is similar, but it is often found on banks, usually on dry soil, and commonly on hilly pastures. The flowers are single, and the scales of the calyx equal the tube. The stem and leaves are downy and rough. The flower is rosy-white, and has no smell. The dark circle round the mouth of the corolla may serve as a honey-guide. The flowers bloom from June to September. The pollination and dispersal are as in the last. No use is made of this plant. It is about a foot high. The soil is a sandy loam.

ORDER MALVACEÆ

Mountain Crane's Bill (*Geranium pyrenaicum*, Burm. fil.).—This plant may be found by the roadside, often near gardens, on railway banks, by river sides, in hedgerows, and in pastures and meadows, but it is not a common plant. The rootstock is spindle-shaped. The plant has no underground stems, and a straggling habit. The leaves are kidney-shaped, with 5–6 blunt divisions, divided into three nearly to the base, with hairy teeth. The deeply-notched purple petals are twice as long as the sepals, and the flower is $\frac{1}{2}$ in. across. It is 1–3 ft. high. The flowers open in June and may be found onward till August. It is perennial (as another Latin name denotes).

ORDER LEGUMINOSÆ

Meadow or Zigzag Clover (*Trifolium medium*, L.).—This plant is found in dry pastures, on rocky soils, meadows, and on banks of railways, streams, &c. As the name implies, the hairy stem is zigzag, the leaflets are oblong, blunt, with lance-shaped stipules or leaflike organs, and the leaf margins are fringed with hairs. The flower-heads are brighter red than in the Red Clover, larger, terminal, stalked. The calyx is quite smooth, with bristle-like teeth. The pods open lengthwise. It is from 1 ft. to 18 in. in height, and flowers from June to September, and is perennial.

Strawberry-headed Clover (*Trifolium fragi-*

ferum, L.).—The habitat of this plant is varied. It occurs by the roadside close to the macadam, on commons, and along sandy seashores, as well as in dry pastures and meadows, and in ditches and wet places. The habit is prostrate, with smooth creeping stems, with inversely egg-shaped leaflets, with small coarse teeth, triangular, oblong stipules or leaflike organs, with a long point. The flowers are numerous, rose-coloured, in dense heads, stalked, in the axils, and rounded. The involucle or whorl of leaflike organs is multifid, and equals the calyx, in which, after flowering, two lobes become enlarged and enclose the pod. The plant is 6 in. to 1 ft. or less in height, and flowers late, in July and August, being perennial.

Lesser Yellow Trefoil (*Trifolium dubium*, Sibth. = *T. minus*, Sm., Relhan).—The habitat of this plant is pastures, roadsides, and dry places. The habit is prostrate or ascending. The stem is wiry, straggling, slender. The leaflets are blunt, narrow, inversely egg-shaped or heart-shaped, the middle one stalked. The stipules are egg-shaped, not as long as the leaf-stalks, the upper part with a long, narrow point. The flowers are small, pale yellow, turning brown, bent back at length, in a dense head of 4–20 on long, slender, axillary, straight stalks, the ultimate stalks short. The standard is narrow, folded, blunt, furrowed, covering the pod. The style is shorter than the pod. The calyx is bell-shaped, with triangular teeth, short, the lower longer, lance-shaped. The pod is inversely egg-shaped. The plant is 6–18 in. high, flowering from June to August, and is a herbaceous annual.

Milk Vetch (*Astragalus glycyphyllos*, L.).—The habitat of this plant is fields, on banks, hedges, and woods, and originally it was doubtless a woodland plant. The habit is prostrate, or zig-zag, and the stems are smooth, stout, with oblong, blunt leaflets, smooth above, hairy beneath, with egg-shaped to lance-shaped stipules or leaflike organs. The flowers are dingy yellow, in compact egg-shaped racemes, on peduncles or flower-stalks shorter than the leaves. The smooth, upright linear pods ($1\frac{1}{2}$ in. long) are bent inwards. The calyx is bell-shaped, half as long as the corolla. The plant is 2–3 ft. in height. It flowers between June and September, and is a herbaceous perennial.

Great Hedge Lotus (*Lotus uliginosus*, Schkuhr).—The habitat of this plant is meadows and pastures, which are usually moist, and damp woods or marshy tracts. The plant is erect in habit or ascending, bearing underground shoots, or may be prostrate. The stems are smooth or hairy as a rule, with inversely egg-shaped leaflets. In bud the teeth of the calyx are spreading, in the common one erect. The flowers are large, golden yellow, and the heads 8–12-flowered, the two upper teeth of the calyx spreading, in the common one (*Lotus corniculatus*) meeting. The standard has a linear claw or stalk. The plant is 6 in. to 2 ft. or more in height. It flowers in July and August, like other moisture-loving plants, rather late. The plant is perennial, herbaceous.

ORDER UMBELLIFERÆ

Caraway (*Carum verticillatum*, Koch).—The habitat of this plant is meadows and fields or upland marshy places. The root is made up of several rootlets in a bundle. The habit is erect, the stems finely furrowed, branched, the leaves linear, narrow, with lobes each side of a common stalk, with stalkless leaflets, with hairlike segments in whorls. The florets are white or pink, the general and partial involucres made up of many leaves. The fruit is egg-shaped, with prominent ridges. The plant is 1-2 ft. high, flowering in July and August, and is perennial and herbaceous.

Great Earth Nut (*Carum Bulbocastanum*, Koch).—The habitat of this plant is chalky fields. The Great Earth Nut has an erect habit, with a much-branched stem arising from a large, black, solitary tuber, with triangular 3-pinnate leaves, the primary segments stalked, linear. The flowers are white, the outer florets larger, there being many bracts in the general and partial involucres. The fruit is oblong, with a short fleshy disk above the ovary, and the styles are bent back. It is 2 ft. in height, the flowers opening in June, July, and it is a herbaceous perennial.

Earth Nut (*Conopodium majus*, Loret).—The habitat of this plant is fields and meadows, sandy and gravelly pastures, and woods. The Earth Nut has an erect habit, with a simple, slender, rounded, wavy stem, arising from a tuber about the size of a hazel nut. The radical leaves are on long stalks with trinerved leaves. The few stem-leaves are deeply divided nearly to the base, with linear segments. There are no bracts or bracteoles. The florets are white, and form a wide flowerhead; the fruit is oval, with a long fleshy disk on the ovary, and short erect styles. The fruit is narrowly egg-shaped, the ridges not marked, with several vittæ or oil stripes. The plant is 2-3 ft., or usually 18 in. in height. It flowers in May and June, and is a herbaceous perennial.

Tuberous Meadow Dropwort (*Oenanthe pinnelloides*, L.).—The habitat of this plant is meadows, banks, and marshy places. The habit is erect, the stem nearly solid, furrowed, arising from tuberous root fibres (beyond the middle), with radical leaves bipinnate, the lower leaves with broad small segments, the upper linear and entire. There are 6-12 rays in the compound umbel, which is flat, with white florets, the partial umbels close, involucre with many linear leaves; the fruit, rounded above, is sub-cylindrical with an enlarged cork base. The plant is 1-3 ft. high, and is in flower from June to August, being a herbaceous perennial.

Pepper Saxifrage (*Silene flavesens*, Bernh.).—The habitat of this plant is meadows, pastures, commons, and damp places. The habit is erect, the stems being angular, solid, grooved, leafless above, with principally radical leaves, once or thrice pinnate, with opposite, linear leaflets, entire, or divided into three lobes. The flowers are pale-green, small, the involucre of 1-2 segments,

the partial involucre of many, the fruit oblong, nearly round, the carpels bluntly winged, and ridged. The height of Pepper Saxifrage is 1-3 ft. It flowers in July, up till September, and is a herbaceous perennial.

Master Wort (*Paedanum Ostruthium*, Koch).—The habitat of this plant is moist meadows. The habit is erect, with round, hollow, stout, furrowed stems. The leaves are triangular, biennial, with 3 broad segments, divided into 3 lobes, 3 in. long. The leaflets are coarsely toothed, egg-shaped. The flowers are white, in large umbels with many rays. The fruit is oblong, with broad wings. There is no general involucre or whorl of leaflike organs, and no calyx teeth. The plant is 2-3 ft. high, flowering in July and August, being a herbaceous perennial.

Bur Parsley (*Caucalis daucoides*, L.).—The habitat of this plant is chalky fields, near limekilns, and it is introduced in ballast and cornfield weeds. The habit is erect, the stem being grooved, with angles, solid, and roughly hairy at the nodes. The leaves are twice pinnate, with lobes each side of a common stalk, the leaflets deeply divided, linear, with small segments. The flowers are pinkish-white, in terminal umbels, with 2-5 rays, and linear bracteoles or minute leaflike organs. The oblong fruit is 3-seeded, with long, smooth, hooked prickles in one row, borne on the secondary ridges. The plant is 6 in. to 1½ ft. in height, flowering in July, and is a herbaceous annual.

ORDER RUBIACEÆ

Erect Bedstraw (*Galium erectum*, Huds.).—The habitat of this plant is pastures, downs, banks, waste places, railway banks. The habit is erect, or ascending, the stem being smooth or hairy, sparingly branched, with linear lance-shaped leaves, 6-8 in a whorl. The flowers are white, borne in a pyramidal panicle, with slender erect or ascending branches. The fruit is smooth. The plant is 1-4 ft. in height, and flowers from June to September, being a herbaceous perennial.

ORDER VALERIANACEÆ

Cat's Valerian (*Valeriana officinalis*, L. = *malika*, Syme).—This is a native plant found in wet meadows, marshes, and wet places. The habit is erect, and the plant is provided with suckers, not stolons, with solitary, furrowed, smooth stems, hairy below, fetid, with alternate leaves, with lobes each side of a common stalk, the leaflets in 6-10 pairs (in *V. sambucifolia* in 4-6 pairs), lance-shaped, toothed on one side. The radical leaves are borne on long stalks. The flowers are white, or flesh-coloured. The small fruit is egg-shaped. The plant is 2-4 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER DIPSACEÆ

Purple Scabious (*Scabiosa Columbaria*, L.).—Dry pastures and banks are the habitat of Purple

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Scabious. The habit is erect. The rootstock is woody and tufted. The stem is simple or branched above, hairy above, with hairs pointing downwards. The radical leaves are on long stalks, narrow, blunt, scalloped, entire or lobed, with the uppermost lobe larger; the upper stem-leaves are divided nearly to the base, with linear segments. They are usually downy. The florets are 5-lobed, lilac, or lilac-blue, collected into a conspicuous head, the involucel notched, with 8 furrows, the outer corollas larger, irregular. The 4-5 bristles of the calyx do not fall. The fruit has a short beak, and is inversely egg-shaped or rounded. The plant is 1-2 ft. high, flowering between July and September, and is a herbaceous perennial.

ORDER COMPOSITÆ

Sneezewort (*Achillea Ptarmica*, L.).—The habitat of this plant is meadows, pastures, waste places, hedgerows, moist places, and thickets. The habit is erect, the stem rigid, ribbed, with few branches. The plant is smooth or downy. The leaves are shining, linear lance-shaped, with few small coarse teeth, stalkless, and distant. The flowerheads are few, in corymbs, with white florets, those of the disk greenish-white, tubular, bisexual, those of the ray white, 8-12. The fruit is smooth, shining, without pappus. The plant is 1-2 ft. in height. It flowers later than Milfoil, and has larger flower-heads. Sneezewort is a herbaceous perennial.

St. James's Ragwort (*Senecio Jacobaea*, L.).—The habitat of this plant is pastures, roadsides, waste ground, sand dunes, &c. The habit is erect. The stem is tall, smooth, finely furrowed, rarely cottony, with numerous leaves. The radical leaves are lyrate, divided nearly to the base, with lobes larger towards the extremity, but the terminal one in this case smallest, toothed, the upper clasping, sessile or stalkless, the lower oblong, stalked. The flowerheads are in large corymbs, erect, with spreading rays, yellow, the fruit of the disk having pappus, that of the ray being smooth. The plant is 1-4 ft. in height, and flowers between June and September, being a herbaceous perennial.

Carline Thistle (*Carlina vulgaris*, L.).—The habitat of this plant is dry fields and pastures, and sandy heaths. The habit is erect. The stem is cottony, stout, branched, with corymbose heads, purplish or yellow. The radical leaves are lance-shaped, spreading, armed with spines, green above, cottony below. The stem-leaves are half-clasping, shorter, numerous. The flowers are purple, the heads many, the corollas all tubular. The outer involucral bracts are divided nearly to the base, and fringed with hairs; the inner are white and linear. The whole plant is spinous, the spines serving as an adaptation to dry-soil conditions and as a protection from cattle and creeping insects. The fruit is brown, silky, with hairs divided into two nearly to the base. The pappus is in 1 row, feathery, united into groups of 3 or 4 at the base. The plant is 6 in. to 1½ ft., and flowers in July till October, being a biennial and herbaceous.

Marsh Thistle (*Cnicus palustris*, Scop.).—The habitat of this plant is wet meadows, ditches, and moist woods. The habit is erect. The stem is solitary, soft, stout, slightly branched, with many wavy spines, winged. The leaves are spinous, lance-shaped, running down the stem, deeply divided to the base, the lobes 2-3-fid, the segments narrow-pointed, hairy both sides, cottony below. The heads are in terminal, small, leafy clusters, the florets dark-purple or white. The involucre is cottony, ovoid, crowded. The phyllaries are ovate to lance-shaped, closely pressed, the outer blunt-pointed, the inner narrow-pointed, purplish-green. The fruit is pale, narrow, smooth, with a dirty-white pappus. The plant is 2-4 ft. high, flowering between July and September, and is a herbaceous perennial.

Brown Knapweed (*Centaurea Jacea*, L.).—This plant is an alien, or native perhaps, in meadows in Sussex. The leaves are linear to lance-shaped, the lower leaves broader, toothed. The flower-heads are purple, radiant. The involucre is not spinous. The appendages of the phyllaries are entire or rarely cut, erect, rounded. The outer phyllaries have appendages deeply divided nearly to the base, the inner are few, entire, the rest irregularly cut. There is no pappus. The plant is 1-1½ ft. high, flowering from July to September, and is a herbaceous perennial.

Hardheads (*Centaurea Scabiosa*, L.).—The habitat of this plant is dry pastures and waste places. The habit is erect, with grooved stems, with soft hair, with few branches. The leaves are deeply divided nearly to the base, with inversely egg-shaped segments, which are entire or lobed. The flowerheads are large and purple, the flower-stalks smooth, with an outer row of sterile florets. The brown involucral bracts have fringed downy tips and margins. The grey, downy fruit has pappus of the same length. The plant is 2-3 ft. in height, flowering between July and September, and is a herbaceous perennial.

Saw-wort (*Serratula tinctoria*, L.).—The habitat of this plant is fields and dry pastures and woods. The habit is erect. The stem is smooth, slender, rigid, grooved, with numerous leaves, and the heads are in corymbs. The leaves are lobed, with the distant lobes larger towards the extremity, divided nearly to the base, coarsely toothed. The oblong flowerheads are terminal corymbs, with purple flowers. There are scales between the florets. The fruit is grey, smooth, with many rows of dirty-white pappus. It is 2-3 ft. high. It flowers late, in August, and is a herbaceous perennial.

Woolly-headed Thistle (*Cnicus eriophorus*, Roth).—The habitat of this plant is pastures, roadsides, waste dry places, often near the coast. The habit is erect. The tall stems are not winged, furrowed, hairy, much branched, above. The leaves are rough above, downy beneath, deeply divided nearly to the base, half-clasping the base, not running down the stem. The flowerheads are large, woolly, the woolly involucre rounded, the florets purple, the phyllaries lance-shaped, having

spines turned back. The fruit is smooth, with feathery pappus. The plant is 3-5 ft. in height, and flowers in July and August, being a herbaceous perennial.

Ground Thistle (*Cnicus acaulis*, Willd.).—The habitat of this plant is dry pastures, usually calcareous. The plant has the rosette habit, with radical leaves and a usually stemless flowerhead, which, however, sometimes elongates in moist spots. The leaves are usually stalkless, lance-shaped, smooth, and deeply divided nearly to the base, white beneath, with sharp spines, forming a protection against cattle, the upper surface hairy or smooth. The flowerhead is solitary, smooth, egg-shaped, the flowers purple or crimson. The fruit is smooth, brown, the pappus dirty-white. It is 8-18 in. in height (when producing stalked heads). It flowers from July to September. The Ground Thistle is a herbaceous perennial.

Creeping Field Thistle (*Cnicus arvensis*, Hoffm.).—The habitat of this plant is fields and waste places, roads, &c. The habit is erect, from a creeping root, and the stem is not winged, grooved and angular, cottony or smooth. The leaves are lance-shaped, oblong, nearly stalkless, with lobes deeply divided nearly to the base. The heads are corymbose, smooth, egg-shaped with a short flower-stalk, the phyllaries lance-shaped, closed, associated, the flowers purple or white. The fruit is smooth, shining, the pappus dirty-white. The plant is 2-4 ft. high, and is in flower between July and September. It is a herbaceous perennial, increased by the creeping rootstock.

Tuberous Thistle (*Cnicus tuberosus*, Roth).—The habitat of this plant is meadows, calcareous downs, cliffs, and woods. The rootstock consists of fibrous, spindle-shaped, fleshy tubers. Similar in habit to Meadow Thistle it has stolons, the stem being erect, round, hairy, leafless above. The leaves are deeply divided nearly to the base, the lobes distant, the stem-leaves stalkless, fringed with hairs, lance-shaped, with coarse small teeth. The flowers are rose-purple, the involucre flattened below, egg-shaped, the bracts closely associated, and smooth. The pappus is feathery. This plant is 1-1½ ft. in height. It flowers in July up till September, and is a herbaceous perennial.

Spotted Cat's Ear (*Hypochaeris maculata*, L.).—The habitat of this plant is meadows, waste places, chalk and limestone hills, calcareous pastures, sea cliffs, &c. The plant has the rosette habit like the last. The flowering stem is simple or forked, smooth, with few leaves, which are frequently radical only, and spoon-shaped, oblong, toothed, spotted, rough, stalkless, with soft hairs. The flowers are deep yellow, in large heads, the involucre bristly on the back with curled hairs, with numerous slender bracts. The fruit is beaked, the pappus in one row, white, outer absent. The plant is 6 in. to 1 ft. high, and flowers between July and September, being a herbaceous perennial.

Hairy-leaved Hawkbit (*Leontodon nudicaule*, Banks & Solander).—The habitat of this plant is dry, sandy places, gravelly pastures, fields, fen. The plant has the rosette habit. The aerial stem

is a single-flowered scape of which there may be several. The leaves are radical and lance-shaped, roughly hairy, wavy, with the lobes bent back occasionally. The flowerheads are yellow, the heads having the involucre smooth, keeled, the edges fringed with hairs, and also down the middle. The fruit has pappus of outside fruits with scales, the inner feathery. The plant is 3-6 in. in height, and flowers in July and August, being a herbaceous perennial.

Rough Hawkbit (*Leontodon hispidum*, L.).—The habitat of this plant is meadows on dry soil, sandy pastures near the sea, mossy ground, waysides, hills, inland. The habit is of the rosette type. The aerial stems are scapes. The leaves are radical, lance-shaped, oblong, roughly hairy, the hairs forked at the tip orstellate, with lobes turned back, the erect scapes single, hairy. The flowerheads are yellow, solitary, glandular at the tip, large, the involucres hairy. The fruit is slender, with brownish-white feathery pappus with an outer row of bristles. The plant is 6-18 in. high, flowering between June and September, being a herbaceous biennial or perennial.

Autumnal Hawkbit (*Leontodon autumnale*, L.).—This is a native plant, being found in pastures and meadows, and waste places. The plant has the rosette habit. The scapes or aerial stems are forked above. The radical leaves are lance-shaped, toothed, smooth, tapering at the base. The flowerheads are yellow, large, few, with smooth involucre, or if hairy sparsely so. The fruit is slender, ribbed, with feathery pappus in one row. The plant is 3-24 in. in height. It is in flower from July to October, and is a herbaceous perennial.

Goatsbeard (*Tragopogon pratense*, L.).—The habitat of this plant is meadows, pastures, waste places, waysides, railway banks, &c. The habit is erect, more or less grass-like. The stem is bluish-green, smooth, tall, with a milky juice, the leaves wavy, clasping, with swollen sheaths, linear, tapering to a long point, furrowed. The flowerheads are yellow, on thickened flower-stalks, the involucre equaling the florets, the florets enclosed by 8-10 bracts. The fruit is rough, with a long beak and pappus in many rows. The plant is 1-2 ft. in height, and flowers in June and July, being a herbaceous biennial with a long yellow tap-root forked below.

Rough Sow Thistle (*Sonchus asper*, Hill).—The habitat of this plant is fields and waste places, and cultivated ground. The habit is erect. It is a brittle, succulent plant, with hollow stems. The leaves are entire or divided to the base, wavy, crisped, with rounded auricles, bent down, and bent back. The flowerheads are yellow, the fruit ribbed lengthways, not wrinkled crossways. The plant is 1-3 ft. high, flowering in June to August, and is a succulent herbaceous annual.

ORDER PRIMULACEÆ

Oxlip (*Primula elatior*, Schreb.).—The habitat of this plant is meadows, clayey woods and copses.

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The plant has the rosette habit. The aerial stems are scapes. The leaves are radical, wrinkled, the leaf-stalks winged, the leaves egg-shaped, narrowed below. The flowers are pale-yellow, in umbels on flower-stalks, the calyx tubular, softly hairy, with lance-shaped teeth, and the flowers are horizontal or drooping. The limb of the corolla is concave, broad, and flat, the tube is not crowded or narrow at the mouth, the throat open not folded. The capsule is oblong, linear, and longer than the calyx. The plant is 4-12 in. high, and flowers in April and May, being a herbaceous perennial.

ORDER GENTIANACEÆ

Gentian (*Gentiana germanica*, Willd.).—The habitat of this plant is calcareous places. The habit is erect. The stem is ascending, much-branched, larger than the Autumnal Gentian (q.v.), with opposite leaves. The flowers are bluish-lilac, the tube of the corolla inversely conical, longer than the calyx, with unequal segments. The capsule is many-seeded. The plant is 2-12 in. in height, and flowers in August and September, being a herbaceous biennial.

ORDER BORAGINACEÆ

Field Scorpion Grass (*Myosotis arvensis*, Hill).—The habitat of this plant is fields, hedge banks, woods, shady places, waste places, cultivated ground. The habit is erect. The stems are numerous, the lower leaves stalked, oblong, blunt, the upper acute. The flowers are blue, bell-shaped, the corolla usually hollow, the calyx is in 5 segments divided to the middle, with spreading hooked hairs. The limb of the corolla equals the tube. The style is very short. The spreading flower-stalks are longer than the calyx. The small nutlets are flattened at the sides, brown, bordered, keeled in front. The plant is 6-18 in. in height, flowering in June up to August, and is annual or biennial and herbaceous.

Dwarf Forget-me-not (*Myosotis collina*, Hoffm.).—The habitat of this plant is fields, dry sandy places, banks, waste ground, walls. It has an erect habit, with stems branched from the base, slender or tufted with prostrate branches. The leaves are oblong, linear, blunt, or with a point. The flowers are bright-blue, with a short tube, the calyx of the fruit open, and swollen below. The style is half as long as the calyx. The hairs on the latter are hooked and spreading. The calyx is not so long as the flower-stalk. The plant is 3-12 in., usually 4-5, in height. It flowers between May and July. The plant is an annual.

ORDER PLANTAGINACEÆ

Lamb's Tongue (*Plantago media*, L.).—The habitat of this plant is fields, roadsides, waste places, usually on dry soil. It is an erect plant, with the rosette habit. The aerial stems are scapes, the leaves radical, stalkless or nearly so, oblong, toothed, downy. The scape is round and

downy. The flowers are green, the anthers are yellow, the filaments long, pink or purple. The spike is oblong, dense. The sepals are not keeled. The capsule is 2-seeded. The plant is 6-12 in. in height, and flowers between June and October, being a herbaceous perennial.

Ribwort (*Plantago lanceolata*, L.).—The habitat of this plant is pastures, grassy places, and waste places, cornfields. The habit is erect, or of rosette type with erect leaves. The aerial stems are scapes, the leaves radical. The leaves are lance-shaped, narrowed at both ends, with 5 ribs. The flowers are green, the long scapes furrowed, the spike short. The capsule is 2-celled, with seeds hollow in front. The plant is 2-12 in. in height, flowering in May up till October. It is a herbaceous perennial.

ORDER SCROPHULARIACEÆ

Thyme-leaved Speedwell (*Veronica serpyllifolia*, L.).—The habitat of this plant is fields, moist waste places, and waysides. The habit is ascending, the stem branched, downy, with glands, the leaves smooth, broadly egg-shaped, stalkless, scalloped, the lower rounded. The flowers are small, pale-blue or white, many, in a long spike, the flower-stalks short and erect, the styles as long as the capsules. The latter are inversely egg-shaped, not so long as broad, smooth, the seeds small and plano-convex. The plant is 3-10 in. in height, and flowers from May to August or later, being a herbaceous perennial.

Common Speedwell (*Veronica officinalis*, L.).—The habitat of this plant is heathy places, heaths, moors, and hedgebanks and coppices in S.E. England. The habit is prostrate, with ascending branches, the plant being hairy, the leaves shortly stalked, coarsely toothed, elliptic. The flowers are pale-blue, in erect racemes, axillary spikes with many flowers, stalkless or nearly so, the flower-stalks erect. The style is very long. The capsule is inversely heart-shaped and notched, blunt at the tip, and longer than the oblong, linear sepals. The plant is 2-18 in. in height, flowering between May and July, and is a herbaceous perennial.

Germander Speedwell (*Veronica Chamædrys*, L.).—The habitat of this plant is pastures, hedge-banks, copses, &c. The habit is ascending, with slender branches, the whole plant being hairy and downy on opposite sides of the stem (not all round as in *V. montana*), the leaves nearly stalkless, egg-shaped to heart-shaped, deeply and coarsely toothed. The flowers are numerous, large, blue, in opposite racemes, with linear bracts less than the flower-stalks, with linear sepals. The capsule is inversely heart-shaped, deeply notched. The plant is 8-24 in. high, flowering in May and June, and is a herbaceous perennial.

Yellow Marsh Eyebright (*Bartsia viscosa*, L.).—The habitat of this plant is meadows and grassy ground. The habit is erect, the plant being a hemi-parasite on the roots of grasses, the stem round, simple, the whole plant clammy, the

leaves stalkless, opposite, rough, with prominent nerves below, egg-shaped or oblong lance-shaped, coarsely toothed. The flowers are yellow, glandular, in axils, distant, crowded above, the oblong capsule downy, not so long as the calyx, with numerous seeds, granulate. The plant is 4-18 in. high, flowering from June to October, and is a herbaceous annual.

Great Yellow Rattle (*Rhinanthus major*, Ehrh.).—The habitat of this plant is fields and cultivated ground. The habit is erect, the stem tall, with many branches, the leaves coarsely toothed, linear, lance-shaped. The flowers are yellow with violet spots, large, in a dense spike and numerous. The bracts are yellow with green points. The lobes of the upper lip of the corolla are oblong. The seeds have a broad wing. The plant is 6-18 in. in height, and flowers from June to August, being an annual, herbaceous plant, semi-parasitic on the roots of grasses.

Perrier's Yellow Rattle (*Rhinanthus Perrieri*, Chabert).—The habitat of this plant is pastures, cornfields. The plant is gregarious, with simple stem or with few branches, the stem-leaves shorter, simple, smooth above, rough below. The flowers are few, yellow. The calyx in fruit blackish-violet. The corolla-tube lengthens during flowering, and in the absence of insects self-pollination takes place. The seeds are adapted to dispersal by the wind. The plant is 9-18 in. in height, flowering in June and July, and is an annual hemi-parasite.

Yellow Rattle (*Rhinanthus stenophyllus*, Schur.).—The habitat of this plant is pastures. The habit is as in the Common Yellow Rattle, but the simple stem has many internodes, the leaves coarsely serrate, lance-shaped, narrow, the stem-leaves, with two or three leaves in the axils and intercalary branches. Otherwise it resembles the Common Yellow Rattle, having yellow flowers, being 9-18 in. high, flowering in July and August, and is an annual hemi-parasite.

Mountain Yellow Rattle (*Rhinanthus monticola*, Druce).—This is a native, and found on mountain pastures, grassy ground, by stony footpaths in the north. The plant resembles the last, but has a shorter stem, with very short and numerous lower internodes, the intercalary internodes elongate, with many branches. The stem-leaves are very narrow, linear, and often bent back. The flowers are treacly-brown. The plant is 2-6 in. in height, and flowers in July and August, being an annual hemi-parasite.

ORDER OROBANCHACEÆ

Yarrow Broomrape (*Orobanche arenaria*, Borkh.).—This plant is parasitical upon *Achillea Millefolium*, which grows in fields and by the wayside. The stem is simple and leafless. The corolla is tubular, curved in front, the tube flattened at the back in the central part, the throat expanded, glandular on the outside, the lobes of the lip blunt, with edges bent back. The tubular calyx is glandular, downy, has 5 sepals, with

awl-like teeth. The stigma is nearly 2-lobed, the style glandular. The smooth filaments have hairs below. The side bracts are awl-like, the intermediate ones lance-shaped, narrow above. The plant is 12-18 in. high, flowering in July and August, and is perennial, parasitic, never green, but brown.

Knapweed Broomrape (*Orobanche elatior*, Sutton).—The habitat of this saprophytic parasite is that of the host-plants *Centaurea Scabiosa*, *Knautia arvensis*, *Carduus lanceolatus*, meadows and pastures, roadsides, and waste places. The stem is erect, yellow, the bracts not so long as the corolla, which is glandular outside, curved, tubular, flattened at the side above, the upper lip 2-lobed, toothed, the lobes bent inwards. It is at first rose-yellow, then pale or dull. The sepals are divided into two nearly to the base, glandular, hairy all over, as long as the tube. The stigma is 2-lobed, yellow, and the anthers white when dry. The anther-stalks are slender below, smooth above. The plant is 9-24 in. in height, flowering from June to August, and is perennial.

Clove-scented Broomrape (*Orobanche caryophyllea*, Sm.).—The habitat of this plant is that of the host-plants *Galium Mollugo*, *G. verum*, and *Rubus fruticosus*. The habit is erect, the stem brown, the flower more or less bell-shaped, or tubular, curved on the back, the sepals divided into two nearly to the base, shorter than the tube, the 3 lobes of the lower lip nearly equal, wavy and toothed, the upper 2-lobed. The stamens are inserted above the base of the tube, which is hairy below, glandular above. The stigma is purple, with 2 lobes nearly separate. The plant is 6-12 in. in height, and flowers between May and July, being perennial.

Common Broomrape (*Orobanche minor*, Sm.).—The habitat of this plant is that of the host-plants Clover and *Crepis virens*. The stem is erect, yellowish-brown or purple, slender, the corolla yellowish-white, with violet or black veins, the tube narrow in the middle, the sepals many-veined, the tube erect or curved downwards, the limb white or yellow, the lobes of the upper lip spreading, the lower toothed, nearly equal, wavy. The stigma is purple, bilobed, the lobes hardly connected, the anthers yellow when dry. The stamens are inserted below the middle of the tube, smooth, with scattered hairs, below the style also smooth, with only a few hairs anteriorly. The plant is 6-24 in. high, flowering from June till August, and is annual.

Purple Broomrape (*Orobanche purpurea*, Jacq.).—The habitat of this plant is grassy pastures, where the host-plants, *Achillea Millefolium*, &c. grow. The habit is erect, the stem blue-purple, tough, not swollen below, downy, like the scales, bracts, calyx, and corolla. There are 3 bracts. The calyx is bell-shaped, with 4 teeth or lobes, which are shorter than the tube, lance-shaped or triangular. The tube is curved, the lobes of the lips acute, the upper lip 2-lobed, the lobes pale-blue with darker veins. The stigma is white, hardly divided, the anther-stalks smooth. The middle of the tube is narrow. The capsule has

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the valves free above. The plant is 4-12 in. in height, and flowers in June and July, being perennial.

Picris Orobanche (*Orobanche Picridis*, F. Schulze).—This is a native plant, with a predilection for *Picris hieracioides* and *Crepis* as host-plants, being found in disused quarries and elsewhere. The habit is erect, the stem slender, hairy, glandular, the plant very pale. The corolla is erect or at right angles afterwards, the bracts white with purple veins, 1-nerved. The sepals are entire, slightly curved at each end, the corolla nearly straight, and the upper lips of the corolla are not notched but have the tip bent in. The stigma is purple, the lobes touching, the stamens hairy below within, and inserted below the middle of the corolla-tube. The anthers are pale-purple, brown, or yellow. The plant is 6-18 in. in height, flowers from June to August, and is perennial.

Ivy Broomrape (*Orobanche hederae*, Duby).—This plant is parasitic on the Ivy, and found in the habitat of the latter in woods and fields, in hedgerows, &c. The habit is erect, the stem purplish. The corolla is violet-brown, the sepals 1-veined, the spike loose, the upper lip egg-shaped, entire, folded, notched, the corolla bent, the middle lobe of the lower lip longest, the lobes of the stigma partly attached, yellow, the anthers brown, paler when dry, the stamens inserted below the middle of the tube, smooth, with hairs below, the style with hairs above, purple-tinged. The plant is 6-24 in. in height, and is in flower between July and August, being a perennial.

Yellow Broomrape (*Orobanche Ritro*, Gren. and Godr.).—This plant is found where Cat's Tail grows in pastures, &c. The habit is erect. The flowers are yellow, the corolla hairy and very glandular, like the whole of the plant, and downy. It is 4-9 in. in height, and flowers in June and July, being a perennial.

ORDER LABIATÆ

Basil Thyme (*Calamintha Acinos*, Clairv.).—The habitat of this plant is fields, banks, dry gravelly places, cornfields, limestone rocks. The habit is prostrate, then ascending, with branches downy, stems with turned-back hairs, slender, and bearing numerous leaves. The leaves are narrow at the base, with the margin rolled back, an adaptation to dry conditions, egg-shaped, toothed, with a long point. The flowers are bluish-purple, with white spots, in simple whorls, 5-6, with leaflike bracts, with bracteoles not so long as the flower-stalk. The tube is closed with hairs, the calyx swollen below, 2-lipped. The plant is short, 4-10 in. high, and is in bloom from June to September, being a herbaceous annual or biennial.

Selffheal (*Prunella laciniata*, L.).—The habitat of this plant is grassy places. The habit is similar to the common form, but spreading, prostrate below, and from this it differs in having the leaves deeply divided nearly to the base. The flowers are creamy-white, or in rare cases blue. The

teeth of the calyx are fringed with hairs. The height is 2-9 in., and it is in flower in July and August, the plant being a herbaceous perennial.

Meadow Clary (*Salvia pratensis*, L.).—The habitat of this plant is dry fields and grassy places. The habit is erect, tall, with glandular hairs above, the stem square, with few leaves, wrinkled, the radical leaves egg-shaped, oblong, heart-shaped below, on long stalks, blunt, scalloped, toothed, the upper stalkless, small, lance-shaped. The large flowers are purple, or bluish-violet, smooth inside, the corolla sticky, three times as long as the calyx. The bracts are long-pointed, heart-shaped below. The plant is 2-4 ft. in height, being handsome, and flowers from June to August, being a herbaceous perennial, and is well worth a place in the garden.

Downy Woundwort (*Stachys germanica*, L.).—The habitat of this plant is fields, roadsides, calcareous places, woods, hedges, on dry soil. The habit is erect. The rootstock bears stolons, the stem is thick, branched, and covered with a felt of white down, or densely silvery. The lower leaves are tufted, egg-shaped, oblong, heart-shaped, wrinkled, on long stalks, the upper stalkless, lance-shaped, scalloped, toothed. The flowers are in stout spikes, rose-purple, the corolla downy, the upper lip spotted, the flowers in interrupted whorls below, on short stalks. The calyx is softly hairy, the upper lip longest. The bracts equal the calyx. The plant is 1-3 ft. in height. Flowers are to be found in July and August. The plant is a herbaceous biennial.

Germanander (*Teucrium Botrys*, L.).—The habitat of this plant is stony fields and calcareous places. The habit is erect, the stem branched from below, and the leaves numerous, deeply divided nearly to the base, or 3-lobed, the lobes oblong or divided, or blunt, the veins prominent below. The flowers, in whorls in the axils, are rose-purple, the calyx swollen below, glandular, netted in fruit. The lower lip of the corolla is spotted red and white. The nutlets are pitted. The stem is 4-12 in. in height. July to September is the flowering season. The plant is a herbaceous perennial.

ORDER ILLECEBRACEÆ

Knawel (*Scleranthus perennis*, L.).—The habitat of this plant is dry fields and sandy fields. The habit is prostrate, the stem simple, or branched irregularly, bluish-green. The leaves are erect, all growing one way. The flowers are green and white, the segments of the calyx in fruit united below, blunt, rounded, with a broad membranous margin. The tube of the calyx is downy, and the bracts are short. The styles are not so long as the stamens. The plant is 2-8 in. in length. Flowers are found from June to September. The plant is a herbaceous perennial.

ORDER POLYGONACEÆ

Bistort (*Polygonum Bistorta*, L.).—The habitat of this plant is moist meadows. It has a large

rhizome, twisted (hence Snakeweed). The habit is erect. The stem is simple, with egg-shaped leaves, almost heart-shaped below, wavy, bluish-green below, the leaf-stalk winged. The flowers are in a dense terminal spike, the flowers white or pink, the fruit brown, polished. The plant is 1-2 ft. in height, and is in flower between June and September. It is a herbaceous perennial.

Acute-leaved Dock (*Rumex conglomeratus*, Murr.).—The habitat of this plant is wet meadows or other places, waste places. The habit is erect, branched, spreading, the stem slender, with egg-shaped, lance-shaped leaves, heart-shaped below, which are not narrowed above the base. The flowers are in distant leafy whorls. The perianth segments or sepals are enlarged, and are oblong, entire, linear, nearly acute, or toothed at the base, and bear 2 oblong tubercles. The flower-stalks are jointed below the middle. The stem is tall, 1-3 ft. high. Flowers may be found from June to October, and the plant is a herbaceous perennial.

Sorrel (*Rumex acetosa*, L.).—The usual habitat of this plant is meadows and pastures, or woods. The habit is erect. The stem is slender and simple. The lower leaves are arrow-shaped on long stalks, the lobes rounded not spreading, bluish-green below, the upper stalkless. There are brownish stipules, toothed, torn. The leaves are acid. The plants are dioecious, the males on one, females on another plant. The outer sepals are turned back in fruit, the inner rounded, with a membranous border, with small tubercles. The fruit is smooth and brown. The height is 1-2 ft. It is in flower from May to August, and is a herbaceous perennial.

ORDER ORCHIDACEÆ

Green Winged Orchid (*Orchis Morio*, L.).—The habitat of this plant is pastures and meadows. The habit is erect. There are 2 root tubers, which are globose. The scape bears radical leaves at the base, which are lance-shaped. The leaves are unspotted, the upper erect. The bracts are coloured, 1-nerved, the same size as the ovary. The flowers are purple and green-veined, the blunt sepals have green veins, and they form a hood with the petals. The lip is pale and purple-spotted. The spur is blunt and nearly straight. The lobes of the lip are broad and scalloped, the middle one longest. The height is 6-12 in. May and June are the flowering months. It is a herbaceous perennial, propagated by tubers.

Irish Orchid (*Habenaria intacta*, Benth.).—The habitat of this plant is limestone pastures. The habit is the typical Orchid habit, the scape short. The leaves are oblong, numerous, spotted occasionally. The flowers are in a dense spike, pink, the lateral petals and sepals form a hood. The lip is 3-lobed and projects, the lobes linear, short, the middle one entire or lobed. The nearly round spur is short. The stigma has 2 ascending lobes, and there is a broad flat disk between them. The plant is 4-10 in. high. It flowers in June, and is a herbaceous perennial.

ORDER IRIDACEÆ

Jersey Crocus (*Romulea Columnæ*, S. & M.).—The habitat of this plant is sandy pastures or other places, dry sandy soil. The habit is that of other bulbous plants, the corm being sheathed, egg-shaped, as large as a pea. The radical leaves are linear, channelled above, slender, bent back, thread-like, flattened at the margin. The scape is solitary, 1-flowered, somewhat drooping, with a spathe longer than the tube. The perianth is petaloid, regular, with 6 segments, which are spreading. The flowers are green outside, white inside, with purple stripes, with a yellow claw. The flower-stalk is curved in fruit. The stamens are epigynous on the throat of the tube, longer than the style, with free, hairy stalks. The linear stigmas are divided into 2 lobes nearly to the base. The capsule is egg-shaped, and the seeds are nearly round, with a leathery coat. The plant is 4 in. high. It flowers in March, up till May, and is a herbaceous perennial, in danger of being not long hence entirely exterminated.

Purple Crocus (*Crocus vernus*, All. = *albiflorus*, Kit.).—The habitat of this plant is fields and meadows. The plant is of the usual bulbous habit. The corm is broad and flattened, with net-like fibres in the tubular sheath, torn, and dirty-brown. The scape is enveloped in the latter. The leaves are formed with the flowers. The flowers are white or purple. The spathe is simple. The throat of the corolla has a fringe of hairs. The stigmas are orange, toothed, 3-lobed, the lobes wedge-shaped, erect, jagged. The anthers are pale bright yellow. The capsule is large, the seeds small and red. The plant is 3-6 in. in height, and flowers from March till May, being a herbaceous perennial geophyte.

ORDER AMARYLLIDACEÆ

Spanish Daffodil (*Narcissus major*, Curt.).—The habitat of this plant is pastures, copses, orchards, &c., where no doubt it has been planted. It differs from the ordinary daffodil in being more robust, frequently with double flowers, with the perianth segments broader, the corona being lemon-yellow, with 6 rounded lobes. It is 12-18 in. in height, and is in flower from March till May. The Spanish Daffodil is a herbaceous perennial.

Narcissus, Large Jonquil (*Narcissus odorus*, L.).—This species is a native of Europe, the Pyrenees, &c., and has been recorded from Cornwall, but is not a native plant, being an escape from cultivation only. The leaves are semi-cylindrical, there being two on the spathe, and the three flowers are yellow, sweet-scented. The crown has 6 deep lobes of a deep yellow.

Pale Twin-flowered Narcissus (*Narcissus biflorus*, Curt.).—The habitat of this plant is sandy fields. The outer scales of the bulbs are membranous. The habit is grass-like or lily-like. The leaves are long, acutely keeled, linear, blunt, not bluish-green, the margins turned back. The scape is flattened, as long as the leaves, 2-edged.

BRITISH FLORA

The perianth is broad, with white or pale yellow-coloured flowers, in pairs (hence the Latin specific name), the margin bent inwards. The tube is slender, sabre-shaped, the flower-stalk slender. The 6 perianth-segments are blunt and egg-shaped. The crown is pale yellow, scalloped, short, hollow, the margin pale then white. This *Narcissus* is 1-1½ ft. in height. It is in flower in April and May, and is a herbaceous perennial.

Pheasant's Eye *Narcissus (Narcissus poeticus, L.)*.—This plant is found in fields, or heathy open fields. The habit is similar to that of the Daffodil. The leaves are rather blunt, keeled, and linear. The scape bears one flower as a rule, and is flattened at the border, being 2-edged. The petals are broadly egg-shaped, white, with a yellow crown, which is hollow above, short, with a scalloped red border (hence the English name). The plant is from 1 ft. to 18 in. in height. The Pheasant's Eye blooms in May, and is a herbaceous perennial.

Snowflake (*Leucojum aestivum, L.*).—The Snowflake is found in wet meadows and by stream sides, in osier beds. The habit is erect, the bulb 1 in. long. The leaves are produced at the same time as the flowers. They are keeled, blunt, rather bluish-green, and linear. The long scape is 2-edged, with a spathe with many white flowers, the tip green and entire. The flower in bud is erect, drooping when open, and is bell-shaped, the flowers in clusters of 2-6. The petals are egg-shaped, green at the tip. The style is thicker above. The fruit is conical. The seeds have no caruncle. The height is 2-2½ ft. Flowers may be gathered in May, and the Snowflake is a herbaceous perennial.

ORDER LILIACEÆ

Grape Hyacinth (*Muscari racemosum, Lam. & D. C.*).—The habitat of this plant is grassy places. The habit is lily-like, or that of a geophyte. At the base of the small bulb are small bulbils. The long linear leaves are bent back, channelled, half-round, limp, wavy, prostrate. The scape is short, round. The musk-scented, egg-shaped flowers are numerous, dark-blue, borne in a raceme, cylindrical, and the rachis after flowering becomes thickened. The slender flower-stalks are long when the plant is in fruit, the upper flowers almost stalkless, barren, or imperfect. The capsule is notched. The plant is 4-10 in. in height. The flowers open in May and June, and the plant is a herbaceous, bulbous perennial.

ORDER MELANTHACEÆ

Meadow Saffron (*Colchicum autumnale, L.*).—The habitat of this plant is meadows and woods. The plant has the lily habit, with tuberous rootstock. The leaves are vernal, the flowers autumnal, rarely vernal. The leaves are smooth and dark-green, lance-shaped, flat, erect, with close nerves. The sheath is long, large, and stout. The radical flowers are purple, the tube 2-6 in. long, and the ovary, buried in winter in the ground, rises up

with the leaves in spring. The anthers are large, yellow, and there are 6 stamens (in *Crocus* 3). The capsule is 1½ in. long, membranous, 3-grooved, shortly stalked, acute at both extremities. The brown seeds are small and numerous. The plant is 6-12 in. in height. The plant is in flower from August till October. It is a herbaceous perennial.

ORDER CYPERACEÆ

Great Prickly Sedge (*Carex muricata, L.*).—The habitat of this plant is ditches, gravelly pastures, marshes, copses. The habit is tufted. The stems are slender, with short stolons, wiry, 3-angled, roughish at the extremity. The leaves are not so long as the stem, narrow, flat. The 4-6 spikelets are borne on a long oval spike or panicle, with or without a bract below, and are touching. The fruit is oval with a long point, veined, finely toothed at the top, with a broad, flat, long beak, divided into two nearly to the base. The nut is egg-shaped. The style is club-shaped below. The plant is 1-2 ft. high, and flowers from May to July, being a herbaceous perennial.

Oval-headed Sedge (*Carex leporina, L. = C. ovalis, Good.*).—The habitat of this sedge is wet places, meadows, pastures, &c. The plant is stout, having the sedge habit. The rootstock is tufted, without stolons. The stems are 3-sided, smooth, or rough above. The leaves are narrow, not so long as the stem. There are about six spikelets, which are oval, contiguous, lobed, close, pale-brown, flattened, alternate. There are male spikelets below. There are no bracts, or, if so, they are awl-like. The glumes are acute, pale-brown, with a green midrib, white edges, with a membranous border. The fruit is erect, ovate, narrow, plano-convex, lobed, with membranous borders. The beak is divided into two nearly to the base. The nut is elliptic, oblong, with a short cylindrical beak, stalked, shining. The plant is 6-12 in. high, flowering in June, and is a herbaceous perennial.

Carex Pairæ, Sch.—This sedge is regarded as only a variety of the last by Mr. G. C. Druce, though raised to specific rank by others. It is found in the S.W. of England and is very rare. It differs from the last in its narrower leaves, the spike being compact or occasionally interrupted below. The fruit is short and spreading and suddenly narrowed into a short beak. The square small nut is blunt. It is from 1-2 ft. in height. Flowers are found in May, June, and July. It is a herbaceous perennial.

Glaucous Sedge (*Carex glauca, Scop.*).—The habitat of this plant is grassy places, usually damp, pastures, woods, rocks. The habit is sedge-like. The stem is tall and wiry, with narrow, bluish-green leaves, which are flat, erect, or bent back. There are several male spikelets, 2-3 stalked, fertile spikelets, the flowers crowded, drooping at length. The bracts are broad and not sheathing. The glumes are dark, short, acute, not as long as the stalkless, elliptical, blunt, rough, swollen fruit, with a round, entire, turned-back

beak. The nut is egg-shaped, triangular. The plant is 4-24 in. in height. It is in flower in May, June, and July, and is quite a conspicuous feature of some pastures, being a herbaceous perennial.

Carnation Sedge (*Carex panicea*, L.).—The habitat of this sedge is wet meadows, marshy places, and marshes. The habit is similar to the last. The stems are curved, smooth, bluntly three-angled, erect, and bear leaves. The leaves are bluish-green, with rough edges, flat. The bracts have long sheaths. The spikelets are oblong, the oblong fertile ones inclined, loose, remote, the solitary terminal spike being entirely male. The fruit is egg-shaped, swollen, dotted, longer than the dark, egg-shaped glumes, which are blunt or acute, with a broad, green midrib and pale edges. The beak is short and round. The nut is 3-angled, dotted, brown, linear-elliptic. The plant is 9-24 in. in height. The flowers are open from June to August, and it is one of our most handsome sedges, known by its variegated glumes. The plant is a herbaceous perennial.

Hairy-fruited Sedge (*Carex tomentosa*, L.).—Pastures, wet meadows, or water meadows as they are often called, constitute the usual habitat of this plant. The habit is typical of the Sedge group. The stem is erect, acutely 3-angled, rough above. The rootstock is creeping. The broad leaves are bluish-green below, smooth, curved, flat. There are no sheaths to the upper bracts, the lower being leaflike with a sheath, reddish at the base. The spikelets are nearly stalkless, the solitary male spikelets erect, the short female shortly-stalked, blunt, cylindrical. The glumes are small, acute. The fruit is densely downy, inversely egg-shaped, with a short beak, notched and narrowed below. The nut is 3-angled, pale, inversely egg-shaped. It is 9-18 in. high, and flowers in May, June, July. It is a herbaceous perennial.

ORDER GRAMINEÆ

Sweet Vernal Grass (*Anthoxanthum odoratum*, L.).—This grass grows everywhere in pastures and meadows or in woods. The habit is typically grass-like, erect. The stem is smooth and shining, nearly simple below, rarely rough. The leaves are flat, hairy, the sheaths furrowed, downy, with a hairy mouth. The panicle is oblong, lance-shaped, interrupted at the base or close, downy or softly hairy, with short branches. The glumes are as long as the awns, which are not so long as the flowers. The spikelets are in groups, green, smooth, or hairy; the lowest glumes are egg-shaped, the upper lance-shaped, nearly awned, the next 2 awned, curved, with blunt tips. The flowering glumes are smooth. The smooth fruit is enclosed in the shining flowering glume and palea. The height is 6-18 in. June and July are the months when this grass scents the meadows. It is the foliage that is aromatic. The plant is a herbaceous perennial.

Anthoxanthum puelpii, Lec. & Lam.—The habitat of this species is pastures, fields, and waste places. The habit is the same as that of Sweet

Vernal Grass, from which it differs in being slender, much-branched, bent at the nodes, with smooth sheaths in the loose panicle narrowed to the top, long slender awn, shorter glumes, the lower 1-2 unequal, rough, membranous, the lower half as long as the long-pointed upper glume, the awned glumes straight. It is 4-8 in. high, and flowers in June and July, being a herbaceous annual.

Meadow Foxtail Grass (*Alopecurus pratensis*, L.).—The habitat of this grass is meadows, pastures, grassy places. The habit is erect, grass-like. The stem is smooth, the leaves are flat, rough along the border, the sheath smooth, enlarged above, the ligule blunt and large. The cylindrical, blunt, dense panicle is slender, the empty glumes hairy, with keel fringed with hairs, the glumes lance-shaped, with a long point, united below, hairy, the awn twice as long as the smooth flowering glume. The anthers are yellow. The styles are united. The plant is 1-3 ft. in height. It flowers before other grasses in April, up till June. It is a perennial, herbaceous plant, with but slightly-creeping stem.

Cat's Tail or Timothy Grass (*Phleum pratense*, L.).—This plant is found in pastures and by the wayside. The habit is erect, tufted. The stems are smooth and ascending, with short, flat leaves. The leaf-sheaths are parallel with the stem. The ligule is long. The panicle is long, cylindrical, blunt, green. The shortly-stalked spikelets are crowded. The glumes are blunt. The rigid, rough awns are half as long as (or less than) the glumes, which have a stout, hairy, green keel, with pale borders. The flowering glumes are membranous and 5-nerved. The anthers are oblong, purple. There are 3 stamens, long styles, slender and feathery stigmas. The fruit is enclosed in the flowering glume, and flattened at the margin. It is 1-4 ft. in height, and the rough, blunt glumes and short awns distinguish it from *Alopecurus pratensis*, with which it is often confused. It is a herbaceous perennial, flowering later than the last in June and July.

Fiorin Grass (*Agrostis alba*, L.).—The habitat of this plant is pastures and waste places, grassy places. The plant has the grass habit. The stem is more or less prostrate below, rooting, then erect, with long prostrate stolons. The leaves are flat, sometimes rough, with smooth rough sheaths. The ligule is long and acute. The panicle is branched or lobed, green or yellowish, compact after flowering, spreading in flower. The florets seldom have awns. The empty glumes are large and rigid, the flowering glumes are 5-nerved, and rarely awned. The plant is 6 in. to 2 ft. in height, flowering between July and September. The plant is a herbaceous perennial.

Common Bent Grass (*Agrostis vulgaris*, With.).—Meadows and marshy places are the habitat in which this plant is found. The habit is prostrate, then ascending, rooting at the nodes, with stolons. The stems are smooth, with smooth sheaths, the ligule blunt, and short. The panicle is long, spreading, narrowly egg-shaped, branched below. The empty glumes are egg-shaped, smooth, red

BRITISH FLORA

or purple and green, the flowering glumes are blunt, shorter, 3-nerved, three times as long as the 2-nerved palea. The awn is short or absent. There are 3 stamens, a short style, and a feathery stigma. The fruit is enclosed in the glume, and is round and smooth. It is 1-1½ ft. in height. It flowers in June and July, and is a herbaceous perennial.

Meadow Soft Grass (*Holcus lanatus*, L.).—The habitat of this grass is meadows, fields, copses, and waysides. The habit is erect. The root is fibrous. The plant is softly downy. The stems are tufted, ascending, with numerous leaves. The latter are flat, downy, with the upper sheaths swollen, and the knots softly hairy. The ligule is short. The panicle is pale-green or pink, the branches twice or thrice divided. The spikelets are oblong. The upper glume is blunt, rough, the empty glume acute, with strong nerves, and the awn is included in the glume, with a smooth or rough tip (not so long as in *H. mollis*). There is no awn in the lower florets. There are 3 stamens, and the stigmas are stalkless and feathery. The height is 1-2 ft. It is in flower from June to August. The plant is a herbaceous perennial.

Yellow Oat Grass (*Trisetum flavescens*, Beauv.).—The habitat of this grass is dry pastures and fields. The habit is erect. The stem is smooth. The radical leaves are hairy, flat, with hairy sheaths. The ligule is blunt and fringed with hairs. The panicle is open, much-branched, half-whorled, spreading, hair-like, yellow. The spikelets are numerous, with 3-4 florets, yellow, shining, glistening. There are 3 spreading awns (hence the generic name) in the flowering glumes, and the empty glumes are egg-shaped, with a long point. The outer palea has 2 terminal bristles. The rachis is hairy. The styles are distinct. The stigmas are feathery. The fruit is furrowed with a downy tip, and enclosed in the flowering glume and palea. It is 1-1½ ft. high. The flowers open in June and July, and give a yellow tinge to the meadows. It is a herbaceous perennial.

Silver Oat Grass (*Arrhenatherum avenaceum*, Beauv.).—The habitat of this plant is fields, pastures, hedges, hedgerows, &c. The habit is erect. The root is fibrous and creeping. The stem is smooth, slender. The leaves are flat, rough, and so protected against cattle. The nodes are smooth or downy. The ligule is blunt. The simple panicle is loose, with the branches twice or thrice divided, rough, long, close above, nodding. There is a twisted bent awn in the lower flowering glume, the upper having none. The lower empty glume is less than the upper, which is acute, lance-shaped. The flowering glume is hairy below the middle. There are 3 stamens. The styles are short and distinct. The stigmas are feathery. The fruit is downy, enclosed in the flowering glume and palea. It is 2-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Dog's Tail Grass (*Cynosurus cristatus*, L.).—This plant is found in dry pastures and on banks. The habit is erect, tufted. The stem is round, smooth, leafless above. The leaves are thread-

like, with a few hairs. The sheaths are smooth. The ligule is divided into two nearly to the base. The spike is linear, stiff, with a wavy rachis. The spikelets are stalkless, close, arranged all on one side of the rachis, flattened in one plane, and with a short awn. The empty glumes are abruptly pointed, the flowering glumes rough above, faintly 3-nerved. There are 3 stamens. The terminal styles are short, the stigmas feathery. The fruit adheres to the flowering glume and palea. It is 6-24 in. high. It is in flower from July to August. The plant is a perennial.

Cock's Foot Grass (*Dactylis glomerata*, L.).—This plant is found in pastures, waste places, &c. The habit is erect, tufted, the root being tufted. The plant is rough, the leaves flat, broad, long, keeled, and flattened at the border. The sheath is rough, the ligule long. The panicle is rigid, with long, distant, spreading, distinct branches, green or violet, with few branches below, rough, horizontal in flower, in fruit ascending. The spikelets are arranged all on one side, in egg-shaped clusters. The two empty glumes have a blunt point, and are membranous, the upper are 3-nerved, the flowering glumes are cartilaginous, and larger, 5-nerved. The awn is short and rough. There are 3 stamens. The stigmas are feathery, the styles terminal. The fruit is flattened on one side, grooved on the other, and enclosed in the glume. The Cock's Foot Grass is 1-4 ft. in height. It flowers from June to July, and is a herbaceous perennial.

Quaking Grass (*Briza media*, L.).—The habitat of this plant is meadows, pastures, heaths, &c., usually on dry soil. The habit is prostrate, then erect, with single stems, slender, and smooth. The leaves are linear, with a long point, flat, smooth or rough. The sheaths are smooth, the upper ones inflated. The ligule is very short and blunt. The panicle is spreading, pyramidal, light, with long slender branches. The spikelets are egg-shaped, pendulous, green or purple, shining, of 5 florets. The glumes are not so long as the lowest florets, the flowering glumes blunt, overlapping or sheathing. The lower palea is oval, cartilaginous. The stamens are 3. The styles are terminal and short, the stigmas feathery. The fruit is flattened, and enclosed in the glume. The plant is 6-12 in. in height, and flowers in June and July. It is a herbaceous perennial.

Green Quaking Grass (*Briza minor*, L.).—The habitat of this plant is fields, dry sandy fields in the S.W., and cultivated ground. The habit is similar to that of the last. The stems are tufted, erect, and slender. The ligule is long and lance-shaped, acute. The panicle is similar to that of the last, but there are 7 florets in the spikelets, which are smaller, pale-green, and broader than long, or triangular. The glume is longer than the lowest florets. The lower palea is round or heart-shaped, cartilaginous, swollen along the back. The plant is 6-12 in. high, and flowers from June to August, being a herbaceous annual.

Annual Meadow Grass (*Poa annua*, L.).—The habitat of this grass is fields, pastures, waste

places, &c. The habit is prostrate below, then ascending, and the stem is rooting at the base, the root fibrous. The stems are flattened, the plant limp, bright-green, smooth, often bluish-green. The leaves are broad, blunt, wavy, linear, with the margin inrolled. The ligule is long and acute, the upper sheath longer than the leaf. The panicle is nearly pyramidal, with spikelets partly ranged all one way, green or purple, the branches spreading, twice divided, at an obtuse angle or horizontal, afterwards turned down. The spikelets are nearly stalkless, egg-shaped, with 5 florets. The lower palea is 5-nerved. The flowering glumes are smooth, the upper glumes broadest in the middle. There are 3 stamens. The 2 styles are short and terminal, the stigmas feathery. The fruit is 3-angled, grooved, enclosed in the glume. The plant is 3-12 in. in height. It is in flower from April to September. The plant is a herbaceous annual, but perennial on the Pyrenees and in India.

Smooth Meadow Grass (*Poa pratensis*, L.).—The habitat of this grass is meadows, pastures, banks, &c. The habit is prostrate, then erect. The rootstock is creeping, with stolons. The round stem is smooth. The linear leaves are flat, acute, with a hollow tip. The sheath exceeds the upper leaves. The ligule is blunt and prominent. The panicle is spreading, with branches 3-5 times divided and rough, after flowering closed or open. The spikelets are egg-shaped, with 3-4 webbed florets. The lower palea has 5 prominent veins, 3 hairy. The plant is 1-2 ft. high. It flowers in June and July, and is a herbaceous perennial.

Rough Meadow Grass (*Poa trivialis*, L.).—The habitat of this plant is meadows, moist and shady places, and damp woods. The habit is similar to that of the last, but there are no stolons. The stem is tufted, like the root, rough. The leaves are rough, and so are the sheaths, the upper longer than the leaf. The long ligule is acute. The panicle is erect, spreading, rough, and five times divided. The flowering glumes 3-5, webbed, the 5 nerves distinct, the spikelets egg-shaped. The plant is 1-2 ft. high. It flowers in June and July, and is a herbaceous perennial, in other essentials resembling the last.

Upright Brome Grass (*Bromus erectus*, Huds.).—The habitat of this plant is fields, waste places on dry soil, sandy and chalky soils. The habit is prostrate below, then erect, the rootstock stout, creeping, without stolons. The stem is rigid, smooth, bent below. The leaves are hairy, with inrolled margins, adapted to dry conditions, narrow, the radical leaves convolute, the upper broadest. The sheaths are hairy, with erect, scattered hairs. The ligule is short. The panicle is narrow, nearly erect, and simple, rigid, with 2-3 divided branches. The rachis is rough. The green or purple spikelets are linear lance-shaped, with numerous florets, flattened, distant. The flowering glumes are hairy, twice as long as the awn. The lowest glumes exceed the upper by one-third, the lower palea being faintly 7-veined. The style is lateral on the ovary, the anthers yellow. The plant is

1-3 ft. in height. It flowers from June to August, and is a herbaceous perennial.

Lop Grass (*Bromus racemosus*, L.).—The habitat of this plant is fields and waste places. The habit is erect. The stem is erect and rigid. The leaves are rigid, fringed with hairs, and otherwise, as the sheaths, smooth, or but slightly hairy. The panicle is long, simple, erect, narrow, with branches with 3-5 divisions. The egg-shaped spikelets are flattened, the flowering glumes overlapping in fruit, rough, broadest above the middle, the lower empty glume is half-way to the top of the fourth floret. The awn is slender, as long as the flowering glume. The plant is 2-3 ft. in height, flowering in June and July, being a herbaceous biennial.

Brome Grass (*Bromus commutatus*, Schrad.).—The habitat of this plant is fields and waste places. The habit is erect. The leaves and sheaths are hairy. The plant is stouter than the last. The panicle is compound, drooping, the spikelets shorter, the margins of the falling flowering glumes rounded at the broadest part. The flower-stalks are as long as or longer than the spikelets. The latter are lance-shaped, oblong. The sides of the lower palea are uniformly rounded at the side. The top of the upper glume is half-way to the top of the fourth flower. The plant is 1-3 ft. in height. It flowers in June and July, and is a herbaceous biennial.

Couch Grass, Tare (*Agropyron repens*, Beauv.).—The habitat of this grass is fields, waste places, cultivated fields, hedgerows, and ditches, &c. The rootstock is long and creeping. The stem is prostrate and then ascending, hollow, smooth. The leaves have inrolled margins at first, then flat, rough above, or hairy, ribbed. The sheaths are round, the ligules very short. The spike is long, close, the rachis not brittle, smooth or downy, rigid, erect or bent. The spikelets are rigid, with 5-7 florets, rough on the keel, the glumes blunt, 5-7 ribbed, the flowering glumes with long points or awned. There are 3 stamens. The ovary is hairy above. The feathery stigmas are nearly stalkless and feathery. The fruit is grooved and adheres to the palea as a rule. The plant is 1-3 ft. in height, or more. It is in flower from June to August. It is a herbaceous perennial.

Meadow Barley (*Hordeum pratense*, Huds.).—The habitat of this grass is damp or wet meadows, and it is frequent in some districts near the sea. The habit is erect and grass-like. The rootstock is creeping. The stem is slender, round, rough above. The leaves are narrow, flat, rolled inwards at length, rough above, hairy below (the narrow sheaths are the same), and the ligule is very short. The spike is flattened, linear, yellow-green, erect. The lateral spikelets are flowerless or male, the central bisexual. All the glumes are bristle-like and rough, not fringed with hairs (as in the Common Wall Barley). The glumes in the lateral flowers are shorter. The awns are spreading. The two nearly stalkless stigmas are feathery. The plant is 1-2 ft. in height. It flowers in June and July, and is a herbaceous perennial.

FLOWERS OF THE CORNFIELDS

[N.B.—Some of the plants placed in the section on Waste Places, might be equally included here, and vice versa, but the choice is arbitrary, and those only that are more general in cornfields, or the most dominant types, are included here.]

ORDER PAPAVERACEÆ

Poppy (*Papaver Lecotii*, Lamotte).—The habitat of this plant is the sides of fields, chiefly on calcareous soil. The habit is erect. The plant differs from the smooth-headed Poppy in having the sap dark-yellow on exposure, the leaf lobes larger, the capsule club-shaped, oblong, broadest one-third below stigma, and the lobes of the stigmatic disk bent down. The flowers are large, the petals red, distinct, inversely egg-shaped, or wedge-shaped. Otherwise the plant resembles *Papaver dubium* (q.v.). The plant is 1-2 ft. in height, and flowers in June and July, being an annual.

Violet Horned Poppy (*Roemeria hybrida*, D.C.).—The habitat of this plant is chalky cornfields, on dry soil. The habit is erect. The stem is slightly hairy or hairless, with yellow juice. The leaves are divided to the base, once or twice, with lobes with a terminal bristle, rough, linear, nearly smooth. The flowers are violet-blue, with a black disk. The petals fall before midday. The sepals are hairy. The pod is cylindrical, rigid, sparingly hairy above, 3-valved, erect. The seeds are numerous, rough, deeply pitted. The plant is 1 ft. to 18 in. high, flowering in May and June, and is a herbaceous annual.

ORDER CRUCIFERÆ

Mithridate Mustard (*Thlaspi arvense*, L.).—The habitat of this plant is cornfields, fields, and roadsides, cultivated ground. The habit is erect. The stem is simple, slender, the radical leaves stalked, the stem-leaves oblong, arrow-shaped, toothed, smooth, with rounded basal lobes. The flowers are white in a long raceme, the pods flat, on slender, spreading flower-stalks, large, rounded, notched, the valves having a broad wing, the cells 5-6-seeded, the seeds rough and finely furrowed, dark, with small pinholes. The plant is 1 ft. in height. The flowers are in bloom from May to July, and the plant is a herbaceous annual.

Wild Radish (*Raphanus Raphanistrum*, L.).—The habitat of this plant is cornfields and cultivated fields. The habit is erect, pyramidal. The root is slender. The stem is stout, erect or spread-

ing, hairy. The leaves are simple, with coarse teeth, the lobes distinct, the terminal lobe largest. The flowers are white, with white petals with violet veins, or yellow with darker veins. The pod is moniliform or bead-like, the beak longer, with slender ribs, awl-shaped, flat. The pods open at the base above the first segment, which is barren and small. The plant is 1-2 ft. high. It flowers in June and July, and is a herbaceous annual.

ORDER CARYOPHYLLACEÆ

Night-flowering Catchfly (*Silene noctiflora*, L.).—The habitat of this plant is sandy cornfields, gravelly fields, cultivated fields, on light soil. The habit is erect. The stem is rounded, glandular, simple or forked, the leaves below stalked, inversely egg-shaped, the upper lance-shaped, acute. The flowers are in a panicle, open at night, are fragrant, creamy-white. The calyx is oblong, elliptic, clammy, veined with 10 ribs, glandular, the teeth long and awl-shaped. The flower-stalks are glandular also. The petals are crowned, divided into two nearly to the base, rolled up in the daytime. The capsule is egg-shaped and has no septa, being as the calyx. The plant is 1-2 ft. in height, but frequently 6-8 in. It is in flower between July and September. It is a herbaceous annual.

Corn Spurrey (*Spergularia sativa*, Boenn.).—This plant is a colonist, found in cornfields, cultivated ground. The habit is erect. The stem is succulent, the leaves in whorls, longer than in the Common Spurrey, and the internodes are longer, the leaves grey-green, linear, fleshy, very clammy. There are 2 stipules below the leaves. The flowers are white, the seeds black, flattened, with a narrow wing, with minute, elevated points, not wart-like projections. The plant is 4-15 in. in height, and flowers from June to August, being a herbaceous annual.

ORDER LEGUMINOSÆ

Lucerne (*Medicago sativa*, L.).—The habitat of this plant is cultivated ground, railway banks, hedges, and fields, hedgebanks and borders of fields, and it is frequently sown by farmers. The plant has an erect habit. The stem is erect,

hollow, branched. The leaves are divided into three. The leaflets are inversely egg-shaped, oblong, toothed, notched above, with a short abrupt point. The flowers are yellow, blue, or purple, in a raceme of many flowers, the flower-stalks not so long as the calyx, the main stalk longer than the leaves. The pods are flattened in a loose spiral of 2-3 turns, downy, the hairs close. The plant is 1-2 ft. in height. It flowers from May to August, and is a herbaceous perennial.

Crimson Clover (*Trifolium incarnatum*, L.).—The habitat of this plant is cultivated fields, clover fields, &c. The plant has an erect habit, with slender stems, and is downy or softly hairy with spreading hairs, the leaves shortly stalked, the leaflets inversely egg-shaped or heart-shaped. The stipules are egg-shaped, blunt, and hairy. The flowers are in a long, cylindrical, later egg-shaped head, crimson, terminal, on stalks, the calyx teeth not so long as the corolla, 10-veined, and hairy, spreading in fruit, and the mouth is also hairy. The petals do not fall. The wing is longer than the keel, the latter springing back into position after it is depressed by insects, and the stamens are exposed. The stamens are diadelphous. The filaments have swollen tips. The style is thread-like. The pod is stalkless, 1-seeded. The plant is 6-18 in. in height, and flowers in June and July, being a herbaceous annual.

Leafless Yellow Vetchling (*Lathyrus Aphaca*, L.).—The habitat of this plant is cornfields, waste places, gravel pits, and about hedges and roadsides. The habit is climbing, the stem weak. The leaves are tendrils, and the stipules, which are large, egg-shaped, spear-shaped, nerved, do the work of the leaves. The first and second leaves in the seedling are scale-like and 3-lobed, with awl-like points, the third and fourth compound, with one pair of leaflets and stipules, and an awl-like tendril. The fifth and later leaves are awl-like points and stipules. The point becomes a tendril above. The flowers are pale yellow, single, rarely on long stalks, erect. The lobes of the calyx are green, linear, about as long as the corolla. The pod is sickle-shaped, broad, nearly erect, beaked, netted, and the 6-8 seeds are smooth and flattened. The plant is 1-3 ft. in height, and flowers in June and July, being a herbaceous perennial.

Tuberous Pea (*Lathyrus tuberosus*, L.).—This plant is a denizen, found in cornfields. The plant is of climbing or trailing habit. The rootstock is creeping, the rootlets tuberous. The stem is angled, not winged. The leaflets (one part) are inversely egg-shaped, with spreading nerves. The leaf-stalk and tendrils are stout, the stipules are large and half-arrowshaped. The flowers are borne on long flower-stalks, 2-5, crimson, in a raceme. The bracts are awl-like. The ultimate flower-stalks are longer than the calyx, the latter with teeth, triangular. The pod is smooth, netted, the seeds smooth and round. The plant is 2-4 ft. in height. It flowers from June to August, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

Broad-leaved Parsley (*Caucalis latifolia*, L.).—The habitat of this plant is cornfields, waste places, chiefly on a chalky soil. The habit is erect. The stem is rough, simple, finely furrowed, round. The leaves have the lobes arranged each side of a common stalk, with leaflets divided nearly to the base, lance-shaped, coarsely toothed, the base running down the stem. The flowerheads are white or pink, in shortly-stalked umbels with 2-4 rays, the bracts membranous. The branches, bearing 5 fruits, with prickles in 2-3 rows, rough, are 5-seeded. The plant is 6-18 in. in height, and flowers in June and July, being a herbaceous annual.

Spreading Hedge Parsley (*Caucalis arvensis*, Huds.).—The habitat of this plant is fields, hedgebanks, roadsides, waste places, and cornfields. The habit is erect, the stem roughly hairy, much-branched, solid, with angles, bearing numerous leaves, once or twice pinnate, the leaflets loose, lance-shaped, cut or coarsely toothed. The flowers are white or pink, in terminal stalked umbels, with 2-8 rays, irregular. There is an involucle of one bract or none. The oblong fruit is rough, with spreading hooked prickles at the tips. The plant is 6-18 in. in height, and is in flower between July and September, being a herbaceous annual.

ORDER RUBIACEÆ

Vaillant's Bedstraw (*Galium Vaillantii*, D.C.).—The habitat of this plant is fields. The habit is spreading, and the plant resembles *G. spurium*, but has stiffly hairy fruit, with hooked bristles, and small green flowers in a cyme, 3-9. The leaves are 6-8 in a whorl, linear, strap-shaped. The plant is lighter green than the Common Cleavers, and the fruit is pale. The stem is rough, and the leaves have turned-down prickles. The plant is 1-3 ft. in height, and flowers in July, being a herbaceous annual.

Cornfield Galium (*Galium tricornе*, Stokes).—The habitat of this plant is cultivated fields, cornfields, &c. The habit is similar to that of Cleavers, the stem prostrate, then ascending and spreading. The leaves are narrow at the tip, 6-8 in a whorl, linear, lance-shaped, rough, the prickles turned back at the margin, and the 3 small creamy-white flowers are in a cyme, on axillary flower-stalks, shorter than the leaves, the middle one only perfect. The fruit is granular, large, white, and the fruit-stalk is turned back eventually. The plant is 4-12 in. in height, and is in flower from June to October. It is a herbaceous annual.

Cornfield Woodruff (*Asperula arvensis*, L.).—This plant is an alien or casual, found in cornfields and waste places. It resembles Field Madder, but has 6-10 leaves in a whorl, which are long, blunt, linear, lance-shaped. The terminal flowers are blue, in a cluster, with a fringe of long hairs around them. The fruit is smooth. The plant varies in height from 3-12 inches, and flowers

BRITISH FLORA

in June, July, and August. It is a herbaceous annual.

ORDER VALERIANACEÆ

Lamb's Lettuce (*Valerianella eriocarpa*, Desv.).

—The habitat of this plant is fields, banks, &c. The habit is erect, branched, with slender spreading stems. The flowers are small, pale-lilac, in crowded cymes. The fruit is softly downy or smooth, egg-shaped, and is crowned with the large, toothed, nearly regular, truncate, net-veined calyx. The empty cells are distant and slender, and the fertile cell is not corky. The plant is 6 in. to 1 ft. high, flowering in June and July, and is a herbaceous annual.

Lamb's Lettuce (*Valerianella carinata*, Lois.).

—This species may be found as a weed in corn-fields, on garden walls, where many similar weeds occur, and on hedgebanks. The plant is much-branched, and like the Common Lamb's Lettuce (*V. olitoria*), except in the following respects. The radical leaves are spoon-shaped, those on the stem oblong. The flowers are pale-blue, in a dense cyme, forming a head. The bracts have a fringe of hairs. The fruit is flattened from front to back, boat-shaped, oblong, there being two large barren cells, and the fertile cell is not corky (as in *V. olitoria*), the cells being nearly equal. It is crowned with a nearly straight tooth. The barren and fertile cells are touching, with a deep furrow between. The plant is 2-8 in. in height. It flowers from April to June, and is a herbaceous annual.

Corn Salad (*Valerianella rimososa*, Bast. = *Auricula*, D.C.).—The habitat of this species is corn-fields and cultivated ground. The habit is as in the next, but it is more slender. The lower leaves are inversely egg-shaped, narrow below, the upper oblong. The bracts are fringed with hairs. The flowers are distant, in a loose cyme, repeatedly forking, pinkish-blue. The fruit is nearly round, swollen, with an erect, membranous, blunt tooth, the calyx forming a crown, the barren cells larger than the fertile, and swollen, with a narrow furrow in front, touching, the fertile cell not corky. The plant is 2-12 in. high. Flowers are to be found in July and August. The plant is herbaceous and annual.

Corn Salad (*Valerianella dentata*, Poll.).—This species is found in cornfields, cultivated ground, and on banks. The habit is similar to that of *V. olitoria*, branched, but slender. The flowers are flesh-coloured, borne in a loose, spreading cyme or corymb. The fruit is narrowly egg-shaped, flat, crowned with the small calyx, which is unequal, 4-toothed, and flat in front with a space, smooth, the fertile cells not corky, the empty cells smaller, and in a separate portion of the fruit wall produced at each end. The plant is from 2 in. to a foot high. It flowers in June and July, and is a herbaceous annual.

ORDER COMPOSITÆ

Corn Chamomile (*Anthemis arvensis*, L.).—The habitat of this plant is borders of cultivated fields,

fields, and waste places. The habit is erect or prostrate below. The stem is much-branched, downy, finely furrowed. The leaf segments are downy, linear, meeting. The flowerheads are broad, the flower-stalk long, swollen above. The receptacle is conical. The disk has yellow florets, the ray florets white, with scales with a blunt point, and exceeding the disk florets, which are flat. The involucral bracts are blunt, with a membranous border, the inner ones torn. The achenes are smooth, ribbed, blunt. The plant is 6-24 in. high. It flowers from June to August, and is a herbaceous annual.

Wild Chamomile (*Matricaria Chamomilla*, L.).

—The habitat of this plant is cultivated and waste ground. The habit is similar to that of the last. The plant is strong-scented, unlike the latter. The branched stem is erect, and the whole plant is smooth. The leaves have twice-divided leaves, with lobes each side of a common stalk. The lobes are linear, narrow, simple or divided. The flowerheads are solitary or in a corymb, on long stalks. The receptacle is conical, lengthening, and hollow. The involucral bracts have no dark border, and are linear. The disk florets are yellow, the disk oblique, the ray florets whiter. The ligule is turned back in fruit. There are no scales between the florets. The fruit is 5-ribbed, on one side, small and grey, the ribs white and slender. The plant is 12-18 in. in height, flowering in June and July, and is a herbaceous annual.

Bristly Hawk's-beard (*Crepis setosa*, Hall., fil.).

—This plant is a casual in clover fields and on cultivated ground. The habit is erect. The stem is furrowed and angular, the whole plant erect. The lower leaves have the lobes turned back, arranged each side of the common stalk, toothed, the stem leaves arrow-shaped, strap-shaped, clasping, entire, or toothed below. The upper part of the flower-stalk and involucral bracts is covered with stiff bristles, slender, not thickened. The buds are erect. The inner slender, rigid, keeled bracts do not enclose the outer fruits. The outer are awl-like. The flowerheads are yellow, bell-shaped. The fruit is slender with a long beak. The plant is 1-3 ft. high, and flowers in July and August, being a herbaceous biennial.

ORDER PRIMULACEÆ

Blue Pimpernel (*Anagallis femina*, Hill).—This plant is a casual, and found on cultivated ground, being local. The habit is nearly erect, the leaves egg-shaped, stalkless. The petals are blue, and have no glandular hairs or rarely so, the corolla being as long as the calyx. The plant is 6-12 in. in height, and is in flower from June to November, being a herbaceous annual.

ORDER CONVOLVULACEÆ

Small Bindweed (*Convolvulus arvensis*, L.).—The habitat of this plant is cornfields, hedges, fields, waste places, and cultivated ground generally. The plant is a trailing or climbing plant,

revolving from right to left, against the sun, in about two hours. The stems are smooth or downy, numerous, branched, angular. The leaves are egg-shaped, arrow-shaped, entire, or wavy. The bracts are linear, small, and some way down the flower-stalk. The flowers are pink with white bands, plaited in bud, rolling in when they fade, two or more on a stalk. The flower-stalks are 4-angled, bent back in fruit. The sepals are unequal. The stigma is slender. The capsule is 2-celled, round, with a point. The seeds are 3-angled, with small prickles. The plant is 6 in. to 2 ft. 6 in. in height, flowering in June till September, and is a herbaceous perennial.

Flax Dodder (*Cuscuta epithymum*, Weihe).—The habitat of this plant is flax fields, roadsides. The habit is festoon-like, the stem thread-like, pale-green. The flowers are white, clustered, the calyx is nearly as long as the corolla, which is inflated and rounded, and the segments are acute. The scales are closely pressed, the stamens do not project. The capsule is 2-celled and 2-seeded. The plant is 1-3 ft. long, and flowers in July and August, being an annual.

ORDER SCROPHULARIACEÆ

Male Fluellin (*Linaria spuria*, Mill.).—The habitat of this plant is cornfields, ballast hills, the former sandy and chalky. The stem is trailing, downy, with short and long hairs, short-stalked. The leaves are egg-shaped, nearly rounded, downy. The flowers are yellow, large, the upper lip chocolate or purplish-brown. The spur is curved, at right angles to the tube. The flower-stalk is hairy. The fifth stamen is a small scale. The capsule is nearly round. The seeds are deeply pitted. The plant is 4-15 in. in height, and is in flower from July to October, being a herbaceous annual.

Narrow-leaved Toadflax (*Linaria Elatine*, Mill.).—The habitat of this plant is cornfields. The habit is prostrate. The short hairy stem bears long, trailing branches, with shortly-stalked leaves, the lower egg-shaped, the upper arrow-shaped. The flowers are as in the last, but not so large. The flower-stalks are hair-like, curved above, longer than the leaves. The sepals are lance-shaped. The capsule is round, the seeds as in the last. The plant is 6 in. to 2 ft. long, and flowers from July to October, being a herbaceous annual.

Small Toadflax (*Linaria minor*, Desf.).—The habitat of this plant is cornfields, fields, cultivated ground, railway ballast, sidings, &c. The plant is erect in habit. The stem is slender, branched, glandular, downy, clammy. The leaves are alternate, linear, lance-shaped, blunt, the radical leaves almost spoon-shaped. The flower-stalks are in the axils longer than the leaves. The flowers are single, the corolla about as long as the calyx, with linear, oblong sepals. The flowers are small, and dull-yellow. The capsule is swollen below, opening by pores, the seeds furrowed, oblong. The plant is 4-15 in. in height. It flowers in May up till October, and is a herbaceous annual.

Green Field Speedwell (*Veronica agrestis*, L.).—The habitat of this plant is cultivated ground, fields, and waste places, or the wayside. The habit is prostrate. The stem is downy, with slender branches, the leaves stalked, blunt, toothed, with regular, shallow teeth, heart-shaped, as long as the flower-stalks. The flowers in the axils and solitary, the lower petal white, are pale-blue. The sepals are fringed with hairs, oval, oblong, blunt, 3-nerved in fruit, unequal. The capsule is hairy, cells 2-lobed, 4-5-seeded, the hairs straight, glandular. The plant is 4-8 in. in length. It flowers between April and September, or later, and is a herbaceous annual.

Buxbaum's Speedwell (*Veronica Buxbaumii*, Ten. = *Tournefortii*, Gmel.).—This plant is an alien, found on cultivated ground, in fields, and waste places, especially gardens. The habit is prostrate. The long, much-branched stems, with ascending tips, are hairy, and the leaves are stalked, shining, broadly egg-shaped to heart-shaped, with 5-6 rounded lobes, toothed and bent. The leaf-stalk is enlarged above. The flower-stalks are longer than the leaves. The flowers are solitary, in the axils, pale-blue, larger than in *V. agrestis* or *V. polita*. The sepals are lance-shaped, acute, in front. The capsule consists of 2 spreading lobes, flattened above, with a sharp keel, net-veined, downy, glandular, with 5-8 seeds, and are twice as broad as long. The plant is 6-12 in. in height, and flowers between April and October, or later, being a herbaceous annual.

Purple Cow Wheat (*Melampyrum arvense*, L.).—The habitat of this plant is cornfields, cultivated ground, and dry banks. The habit is erect. The stem is branched, covered with short, stiff hairs, bluntly angled, stout, rather rough. The leaves are lance-shaped, linear, acute, with a rough edge, somewhat downy both sides, and entire. The bracts are purple, broadly lance-shaped, with long, slender, acute teeth, divided to the base. The segments are awl-shaped. The flowers are rose colour, with a yellow throat, and dark-pink, closed lips, the tube curved, in loose, conical spikes. The corolla is longer than the calyx, with long, slender teeth. The capsule is egg-shaped, not so long as the calyx, 1-seeded. The plant is 9-24 in. in height, flowering from June to September, and is a herbaceous hemi-parasitic annual.

ORDER LABIATAE

Corn Mint (*Mentha arvensis*, L.).—This plant is found in cornfields, cultivated fields, and waste places. The habit is erect. The stem is short, branched, with short hairs, dense, and turned back. The leaves are narrowed below, stalked, egg-shaped, oblong, lance-shaped, toothed, the upper similar and large. The flowers are lilac, in axillary, distant whorls, none at the top, the calyx bell-shaped, with triangular, short teeth, as broad as long. The throat of the calyx is naked. The corolla is lined with hairs and hairy outside. The bracteoles are acute, and not as long as the flowers. The nutlets are dry and smooth. The

plant is 1-2 ft. in height, and flowers late, like the rest of the group, from August to October, and is a herbaceous perennial.

Field Woundwort (*Stachys arvensis*, L.).—The habitat of this plant is cornfields, fields, and waste places. The habit is prostrate, or may be ascending. The stem is weak, hairy at intervals, branched from the base, rooting below. The radical leaves are shortly stalked, the upper leaves stalkless, egg-shaped, heart-shaped, blunt, scalloped. The flowers are purple, in whorls of 4-6. The bracts are stalkless, acute. The flower-stalks are short. The small corolla is slightly longer than or equal to the calyx. The nutlets are covered with dots and warts. The plant is 6-18 in. in height, and flowers from April to November, being a herbaceous annual.

Red Hemp Nettle (*Galeopsis Ladanum*, L.).—This plant is found in cornfields, cultivated ground, and waste places. The habit is erect. The stem is softly downy, with hairs bent down, not thickened at the joints. Briquet says that the thickened nodes are differentiated to cause movements, such as geotropism and heliotropism, these swollen nodes being marked in *Galeopsis Tetrahit* (Vol. III). The leaves are egg-shaped, lance-shaped, toothed. The flowers are purple, the lower lip mottled, with the tube of the corolla equal to the calyx, in separate whorls. The nutlets are flattened, rounded. The plant is 10-12 in. in height, and flowers from July to October, being a herbaceous annual.

Hemp Nettle (*Galeopsis angustifolia*, Ehrh.).—This plant grows in sandy and gravelly districts. It is distinguished from *G. Ladanum* by the narrower leaves united below, toothed at intervals, or nearly entire, the upper whorls close, the tube exceeding the corolla and the slightly notched upper lip of the corolla. It flowers in August and September, and is an annual.

Downy Hemp Nettle (*Galeopsis dubia*, Leers).—The habitat of this plant is sandy cornfields and cultivated ground. The habit is similar to that of *G. Ladanum*. The stem is not thickened at the nodes, downy, glandular, with hairs turned back. The leaves are broad, egg-shaped, lance-shaped, toothed, downy both sides, soft. The flowers are pale-yellow, white or purple, the upper corolla lip deeply notched, the calyx glandular, downy, the teeth not longer than the tube. The whorls are dense. The bracteoles are small. The plant is from 10-12 in. in height. July and August are the months in which it is in flower. It is a herbaceous annual.

Large-flowered Hemp Nettle (*Galeopsis speciosa*, Mill.).—The habitat of this plant is cultivated ground. The habit is as in the Common Hemp Nettle. The stem is thickened at the nodes, with stiff hairs. The leaves are oblong, egg-shaped, with a long point, toothed. The flowers are large, yellow, and with a purple spot on the lower lip, the corolla large and broad, the tube longer than the bell-shaped calyx, the upper lip arched, as broad as long. The teeth of the calyx are not so long as the tube. The nutlets are convex above

and dark-brown, the inner angle rounded downwards. The plant is 1-2 ft. in height, and is in flower in July and August, being a herbaceous annual.

ORDER POLYGONACEÆ

Black Bindweed (*Polygonum Convolvulus*, L.).—

The habitat of this plant is fields, waste places, and cultivated land. The habit is trailing or creeping, twining. The root is fibrous. The stem is angular, downy on the angles, the leaves heart-shaped, arrow-shaped, the leaf-stalk short, slender. The flower-stalks are bent back, jointed above the middle. The flowers are in a raceme, the perianth segments bluntly keeled, the sepals green, blunt, with white margins. The nut is 3-angled, opaque, finely furrowed. The plant is 1-4 ft. in height, and flowers in July up till September, being a herbaceous annual.

ORDER EUPHORBIACEÆ

Dwarf Spurge (*Euphorbia exigua*, L.).—The

habitat of this plant is cornfields, fields, cultivated ground. The habit is erect, branched from the base. The stem secretes a milky juice, possibly a protection to the plant. The plant is smooth. The branches are erect and rigid, or prostrate. The leaves are broader above the base, or below the middle, linear, acute. The bracts are lance-shaped, toothed at the base. The flowerheads are forked, in rays of 3-5, the involucres small, nearly stalkless, the lobes rounded, with 2 horns. The small capsule has rough and warty angles, smooth. The seeds are pale-grey, 3-angled, keeled, wrinkled. The plant is 4-9 in. in height. It flowers from July to October, and is a herbaceous annual.

ORDER GRAMINACEÆ

Foxtail Grass (*Alopecurus agrestis*, L.).—The

habitat of this plant is cornfields, fields, and roadsides. The habit is erect, prostrate below. The stem is rough. The leaves are flat, with rough edges, the sheaths smooth or rough, the ligule large and blunt. The wavy, slender panicle is purple, tapered (hence *myosuroides*), with short branches, hairy. The spikelets are two. The empty glume is smooth, acute, united to the middle, with a fringe of hairs on the back. The flowering glume is slightly projecting. The awn is twice as long as the palea. The styles are combined. The fruit is enclosed in the palea. The plant is 1-2 ft. in height, and flowers from May to October, being a herbaceous annual.

Black Bent-grass (*Agrostis nigra*, With.).—The

habitat of this grass is cultivated fields or their borders. It has been regarded as a variety of *A. vulgaris*. The stem is erect, the plant being taller and more robust than the latter. The ligule is long, prominent, obliquely blunt. The sheaths are rather rough. The panicle is rough, with rigid branches, which are erect to spreading, simple below. The glumes are nearly equal, toothed above. The anthers are pale when ripe,

half as broad as long. The plant is 1-3 ft. high. It is in flower in July, and is a herbaceous perennial.

Wind Grass (*Apera interrupta*, Beauv.).—This species is perhaps a colonist, and the plant is found on sandy ground. The habit is similar to *A. spica venti* (q.v.). But the panicle is narrow, interrupted, and the anthers are oblong or oval. The branches of the panicle do not spread but divide from the base. The awn exceeds the palea three times. The plant is 6-18 in. in height. It is in flower in June and July. It is a herbaceous annual.

Oat (*Avena strigosa*, Schreb.).—The habitat of this grass is cornfields. The habit is erect, the plant smaller and more slender than the Wild Oat. The leaves are sometimes hairy. The florets are ranged all on one side of the panicle, with few branches, and about 2 florets in each spikelet, drooping at length. The flower-stalks are smooth. The lower palea is smooth, the empty glumes 7-9 nerved, the flowering glumes divided nearly to the base, with long straight awns distinguishing it from the cultivated Oat. The plant is 2-3 ft. in height, and is in flower between June and July. It is a herbaceous annual.

Brook Rye (*Bromus secalinus*, L.).—This plant is found in cornfields, cultivated fields, and by roadsides. The plant has an erect, grass-like habit. The stem is rigid, smooth, with broad, smooth leaves, the sheaths furrowed, and the ligule is short. The panicle is oblong, loose, drooping in fruit, compound, the rachis rough, wavy. The spikelets are flattened, egg-shaped, the flowering glumes spreading, 5-8, not overlapping, round and rough, exceeding the awn, 7-9-nerved. The top of the upper glume is half-way between the base and top of the fourth floret. The empty glumes are rough, oblong. The plant is 1-4 ft. in height, and flowers between June and July, being a herbaceous annual.

Rye Grass (*Lolium remotum*, Schrank).—This plant is a rare species, found in cultivated fields and waste places. The habit is erect. There are no barren shoots. The spike is slender, with 7-11 florets, longer than the glumes. The awn of the lower palea is less than the palea, or it may be awnless. It is swollen in fruit and cartilaginous below, narrower than the upper. The plant is 6-18 in. in height. It flowers in June and July, and is a herbaceous annual.

FLOWERS OF THE SEA-COAST

[The maritime species form a distinct formation, growing in a fringe or zone around the coast. A few, however, are found on high mountains, and at a distance from the sea, where the water is brackish or saline, and a few are general in their occurrence. Many waste-ground plants are more abundant on the sea-coast than inland.]

ORDER RANUNCULACEÆ

Thalictrum dunense, Dum.—The habitat of this plant is sandy shores and sand-hills or dunes (hence *dunense*). The plant is similar in habit to *T. minus*. The stem is leafless. The floral branches are horizontal or bent down. The panicle is broad and short, with spreading branches.

Ranunculus baudotii, Godr.—The habitat of this plant is slightly brackish water, or near the sea. The habit is trailing or floating. The floating leaves are stalkless or stalked, the segments 3-4 lobed, wedge-shaped, the leaves kidney-shaped, broader than long, or with linear, blunt segments. The submerged leaves are 3-forked, with rigid segments. The flower-stalks are long, thick, narrow above, longer than the leaves. The petals do not fall and do not touch, being 7-veined, the flowers white, starlike. The buds are globular, slightly flattened above. The stipules are parallel with the stem. The stamens (15-20) are not longer than the pistil. The stigma is tongue-shaped, the style is straight, persistent below, bent back above. The receptacle is long to conical, thicker than the flower-stalk. The carpels are numerous, half inversely egg-shaped, inflated above. In *R. marinus* there are no floating leaves. The plant flowers between May and August, and is a herbaceous perennial.

Wild Peony (*Paeonia corallina*, Retz).—The habitat of this plant is sea cliffs. The Wild Peony has the shrub habit, but is herbaceous. The roots are fleshy, with knobs. The leaves are in threes, with the divisions also in threes. The leaflets are egg-shaped, bluish-green below. The flowers are crimson. The anthers open inwards, and are yellow. The stamens spring from a glandular disk. The calyx consists of 5 persistent sepals. The petals are 5 or more. The 2-5 follicles are downy, bent back from the base. The seeds are numerous and burst inwards. The plant is 1-2 ft. high, and flowers in May and June, being a herbaceous perennial.

ORDER CRUCIFERÆ

Queen Stock (*Matthiola incana*, Br.).—The habitat of this plant is sea cliffs. The plant has

the shrub habit. The stem is branched, erect, hoary. The leaves are entire or obscurely toothed, oblong to lance-shaped. The flowers are purple to violet. The pods are cylindrical, glandless. The seeds are round, winged. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Seastock (*Matthiola sinuata*, Br.).—The habitat of this plant is shores and sea sand. The plant has a spreading habit. The stem is herbaceous, woolly or downy, branched above. The radical leaves are stalked, linear, inversely egg-shaped or oblong, the lower leaves are wavy to toothed. The flowers are in a raceme, pale-lilac, fragrant at night. The pod is flattened at the border, prickly, glandular. The seeds are winged. The plant is 1-2 ft. high, flowering from June to August, and is a herbaceous perennial.

Wild Cabbage (*Brassica oleracea*, L.).—The habitat of this plant is sea cliffs. The plant is prostrate in habit. The rootstock is fleshy, cylindrical, stout, branched, leafy above. The stem is stout, twisted, scarred, persistent. The leaves are hairless, with stomata, the upper surface protected by waxy secretions, bluish-green, wavy, lobed, the lower with the lobes larger upwards, the upper stalkless, oblong, thick, fleshy, enlarged at the base, not auricled. The flowers are large, pale-yellow, in a long raceme before the flowers open. The calyx is erect, with closely-pressed sepals. The pods are spreading, flattened at the border, with a short awl-like beak, seedless, the valves keeled and nerved. The seeds are round. The plant is 1-2 ft. high, flowering between May and August, and is a herbaceous biennial or perennial.

Isle of Man Cabbage (*Brassica monensis*, Huds.).—The habitat of this plant is seashores, sandy western coasts. The habit is erect or prostrate. The stem is simple, hairless, leafless. The rootstock is stout and woody. The leaves are chiefly radical, hairless, stalked, deeply divided nearly to the base, with oblong lobes, with unequal teeth; the upper leaves linear. The flowers are pale-yellow. The pods are spreading, with a thick beak, 1-3 seeded. The valves are 3-nerved. The seeds are dark, dotted with pin holes, round. The plant is 6 in. to 2 ft. high,

flowering between June and August, and is a herbaceous biennial.

Brassica Cheiranthus, Vill.—The habitat of this plant is dry places. The plant has the same habit as the Isle of Man Cabbage. The stem is erect, leafy below, hairy below, branched. The leaves are hairy. In other respects the plant resembles *B. monensis*. It is 1-3 ft. high, flowering from June to August, and is a herbaceous biennial.

Stalked Scurvy Grass (*Cochlearia danica*, L.).—The habitat of this plant is the sea-coast, sandy and muddy shores. The plant has the loose rosette habit. The lower stem-leaves are stalked, with 3-5 lobes, the upper leaves with short stalks, clasping, lobed. The radical leaves are triangular, heart-shaped, lobed, the stalks long, shortened farther from the root. The flowers are white, with small petals. The pods or silicles are egg-shaped, 2-celled, with 4-6 seeds in each cell. The seeds are flattened at the side. The style is short. The plant is 1-12 in. in height, and flowers between April and August, being a herbaceous biennial.

Northern Scurvy Grass (*Cochlearia grænlæn-dica*, L. = *C. alpina*, Wats.).—The habitat of this plant is mountains, seashores on the Scotch coast. The plant has more or less the rosette habit. The plant is small, tufted, fleshy. The radical leaves are numerous, fleshy, rounded to kidney-shaped, entire, stalkless. The upper stem-leaves are stalkless or shortly-stalked, elliptic, lance-shaped, or egg-shaped, spoon-shaped. The pod is more or less rounded, rhomboid to oblong. The style is short. The plant is 2-6 in. in height, flowering from June to August, and is a herbaceous biennial.

Dittander (*Lepidium latifolium*, L.).—The habitat of this plant is salt marshes where native, and where introduced, old castles, &c. The habit is erect. The stem is branched. The plant is hairless, bluish-green. The rootstock is long, and the plant is stoloniferous. The radical leaves are long-stalked, oblong, coarsely-toothed. The stem-leaves are more or less stalkless, narrower, oval to lance-shaped, toothed or entire. The flowers are creamy-white, small, in short or compound, panicled, dense corymbs, with bracts. The pods are egg-shaped, downy, entire, on short stalks, the valves not winged. The style is very small. The plant is 2-4 ft. in height. It flowers in July and August, and is a herbaceous perennial.

Sea Radish (*Raphanus maritimus*, Sm.).—The habitat of this plant is sandy, rocky shores, sea-coasts. The habit is as in Jointed Charlock, of which it may be regarded as the wild form, as the former is the wild form in turn of the cultivated *R. sativus*. The plant is more hairy. The root is thick. The radical leaves are interruptedly pinnate. The leaf-segments are numerous, close, overlapping, horizontal, or reversed, the alternate smaller. The flowers are smaller also, yellow, rarely white. The pod is jointed or moniliform with fewer joints, longer than the short beak, deeply constricted, the joints ribbed. The beak is slender, awl-like. The plant is 1-4 ft. high, flower-

ing between June and August, and is a herbaceous biennial.

ORDER FRANKENIACEÆ

Sea Heath (*Frankenia lœvis*, L.).—The habitat of this plant is salt marshes, ballast hills. The plant has the shrub habit. The stems are creeping, slightly downy, prostrate, wiry. The leaves are in whorls or clusters, with rolled-back margins, adapted to dry conditions, linear-oblong, hairless (hence *lœvis*), or fringed with hairs at the base. The flowers are small, rose colour, terminal, or in the forks stalkless. The calyx is slightly hairy between the prominent angles, the sepals forming a tubular calyx with 4-5 sepals. The petals are 4-5, the claws long, the laminae spreading. The capsule is 3-sided, the seeds are small, and the embryo is straight, surrounded by albumen. The plant is creeping. It flowers between June and September. The plant is a herbaceous or shrubby perennial.

ORDER RESEDACEÆ

White Rocket (*Reseda alba*, L.).—This plant occurs by roadsides, in garden rubbish-heaps, and near the seashore, in waste, sandy places. The habit is erect. The stem is shrubby below. The leaves have the lobes each side of a common stalk, wavy, bluish-green, the lobes linear, acute, entire. The flowers are white, with 6 sepals, linear-lance-shaped, with 6 nearly equal petals, 3-fid, longer than the calyx, with a flower-stalk not so long as the latter. There are 4 stigmas, 12-14 stamens. The fruit is oblong, wrinkled. The seeds are rough, kidney-shaped. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous biennial.

ORDER VIOLACEÆ

Viola curtisiae, Forst.—The habitat of this violet is sandy shores and dunes. The habit is creeping. There is no rootstock. The stems are rough, angular, and the plant is branched, tufted, stoloniferous. The lower part of the stipule is lengthened, separating the lateral lobes. The petals are not much longer than the sepals, spreading, blue, purple, or yellow. The capsule is 3-angled. The plant is 1-5 in. high, flowering between May and July, and is a herbaceous perennial.

ORDER CARYOPHYLLACEÆ

Seaside Mouse-ear (*Cerastium tetrandrum*, Curt.).—The habitat of this plant is sandy and waste places, usually near the sea, pastures, walls, &c. The habit is branched. The plant is clammy. The stems are cymose from the base. The leaves are egg-shaped, oblong, the radical leaves inversely egg-shaped to lance-shaped, the stem-leaves broader upwards. The bracts are herbaceous, broad, oval, acute, blunt-pointed, leaflike. The sepals are clammy, 4-5, lance-shaped, acute, the tips and margins narrowly membranous, glandular. The petals are notched, with branched

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veins. The capsule is straight, slightly longer than the calyx. The fruit-stalks are 2-4 times as long as the capsule, erect at length. The plant is 1-10 in. high, flowering from May to July, and is a herbaceous annual.

Sea Pearlwort (*Sagina maritima*, Don.).—The habitat of this species is maritime places (hence *maritima*), sandy seashores. The habit is prostrate or ascending. The plant is hairless. The central stem is long, forked, erect, with ascending branches producing flowers, purple, brittle, slender, with long internodes. The leaves are fleshy, blunt, blunt-pointed, rounded at the back, linear. The sepals are blunt, concave, the tips bent inward, as long as the capsule, somewhat spreading at length, nearly erect in fruit. The flower-stalk is erect. The plant is 1-6 in. high, flowering between July and September, and is a herbaceous annual.

Jersey Sea Spurrey (*Spergularia atheniensis*, H. & S.).—The habitat of this plant is sea-coasts. The habit is as in the other species of British Sea Spurrey. The leaves are not fleshy, and there is no basal rosette of leaves. The stipules are broadly triangular, dull-yellow, white. The flowers are pink. The capsule is not longer than the sepals. The plant is from 3-5 in. in height, and is in flower in June and July, being a herbaceous annual.

Sea Spurrey (*Spergularia salina*, Presl.).—The habitat of this plant is sea-coasts. The habit is prostrate. The plant is more or less downy. The rootstock is scarcely woody, flattened, small, the branches stout. The leaves are long, fleshy, flat, half-cylindrical, long, and narrow-pointed. The bracts are short, entire, dark, triangular, egg-shaped, leaflike. The flower-stalks are shorter than the bracts. The petals are pink with a white base, not so long as the calyx. The stamens are less than 10. The capsule is longer than the calyx, and as long as the fruit-stalks. The seeds are round, with thickened border, or flattened at the border, or with a broad, membranous wing, pale-brown. The plant is 4-12 in. long, flowering from June to September, and is a herbaceous annual or biennial.

Sea Spurrey (*Spergularia media*, Presl. = *S. marginata*, D.C.).—The habitat of this plant is maritime places, muddy salt-marshes. The habit is prostrate. The rootstock is scarcely woody, slender, the branches stout, flattened at the border. The leaves are long, half-round, fleshy, blunt, more or less acute, smooth. The bracts are entire, broadly triangular. The flowers are pale-pink with a white base, as long as the sepals. The flower-stalks are long. The capsule is large, twice as long as the calyx, not half as long as the fruit-stalk. The seeds are reddish, rounded, smooth, with thickened borders, and a broad, membranous wing. The plant is 4-15 in. in height, flowering between June and September, and is a herbaceous biennial or perennial.

Sea Spurrey (*Spergularia rupestris*, Lobel = *Alsinia rupicola*, Hiern = *A. rupestris*, Lobel = *Lepigonum rupestre*, Kindb.).—The habitat of this

plant is rocky places near the sea. The plant is in habit like *S. media* (also maritime). It is glandular, downy. The rootstock is thick, woody. The stem is round in section. The leaves are tufted, short, flat or half-cylindrical, fleshy, pointed, downy. The stipules are broadly ovate, prolonged, more or less entire. The flowers are pale-pink, the petals are longer than the calyx. There are two stamens. The capsule is large—equal to, or longer than, the calyx, half to two-thirds shorter than the fruit-stalks. The seeds are flattened, pear-shaped, with a thick border. The plant is 4-12 in. high, flowering from May to September, and is a herbaceous perennial.

Four-leaved Allseed (*Polykarpon tetraphyllum*, L.).—The habitat of this species is S.W. coasts of S.W. England, and waste places in the Channel Islands where it is more common. The habit is prostrate. The lower leaves are 4 in a whorl (hence *tetraphyllum*), those on the branches opposite, inversely egg-shaped, and in young plants the leaves are often all opposite. The flowers are triandrous in crowded clusters, the petals notched. The capsules are numerous (hence *Polykarpon*). The plant is 2-8 in. high, flowering between May and July, and is a herbaceous annual.

ORDER MALVACEÆ

Guimauve or Marsh Mallow (*Althaea officinalis*, L.).—The habitat of this plant is marshes near the sea. The habit is erect. The plant is softly downy, velvety, the stem more or less simple. The leaves are soft both sides, velvety, entire, 3-5 lobed, broad, shortly-stalked, egg-shaped to heart-shaped, or nearly round, thick, toothed, scalloped. The involucle is 6-9 lobed, and is an epicalyx. The flower-stalks are axillary, with many flowers, not as long as the leaves. The flowers are rose-colour in a cyme. The sepals are egg-shaped. The carpels are downy. The plant is 2-3 ft. high, flowering in August and September, and is a herbaceous perennial.

Tree Mallow (*Lavatera arborea*, L.).—The habitat of this plant is maritime rocks. The habit is erect. The stem is stout and woody. The plant is softly downy. The leaves are velvety, paled, 1-7 lobed, scalloped, nearly round, long-stalked, with broad, short lobes, the upper more entire. The flower-stalks are axillary, crowded, 1-flowered, shorter than the leaf-stalks. The flowers are large, rose-colour, with dark veins, glossy. The involucle or epicalyx is 3-lobed, the lobes large, egg-shaped. There are 10 carpels, or more, in a ring on a common axis, from which they break off separately when ripe. The carpels are like brown or green caterpillars, and birds may disperse them. The plant is 3-8 ft. high, flowering between July and September, and is a herbaceous biennial.

ORDER GERANIACEÆ

Bloody Crane's Bill (*Geranium sanguineum*, L.).—The habitat of this plant is rocky, dry places,

sandy shores. The habit is prostrate, then ascending, the stem geniculate. The rootstock is stout and blunt. The plant is hairy, with scattered, spreading, horizontal hairs. The leaves are nearly round, 5-7 lobed, the lobes divided into 3 nearly to the base, narrow, linear to oblong, lance-shaped, blunt or more or less acute. The leaves are vertical in sunlight. The stipules are egg-shaped, acute. The flowers are solitary, large, crimson or pink (hence *sanguineum*). The petals are long, inversely heart-shaped, with bearded claws. The sepals are spreading, oblong, blunt, awned. The flower-stalks are long. The carpels are smooth, crowned with few bristles. The seeds are dotted, wrinkled. The anther-stalks are swollen below. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Sea Stork's Bill (*Erodium maritimum*, L'Her.).—The habitat of this plant is bare places near the coast, sandy and gravelly. The habit is prostrate. The stem is slightly hairy, the hairs soft and glandular. The leaves are simple, egg-shaped, oblong or heart-shaped, shortly-stalked, lobed, not cut deeply into segments, scalloped. The stipules are egg-shaped. The flowers are pale-pink, sometimes apetalous, or with very small petals, 1-2 on each stalk. The carpels are hairy, with a transverse straight, deep furrow below the deep semicircular pit near the apex. The anther-stalks are entire. The plant is 4-18 in. long, flowering between May and September, and is a herbaceous biennial or perennial.

ORDER LEGUMINOSÆ

Annual Rest Harrow (*Ononis reclinata*, L.)—Annual Rest Harrow is found in short turf near the coast, sandy places, sea cliffs. The habit is prostrate, or ascending. The plant is spreading, hairy, clammy, branched. The leaflets are inversely egg-shaped, wedge-shaped, acutely toothed at the tip. The stipules are large, half-egg-shaped. The flower-stalks are 1-flowered, slender, jointed below the flower, shorter than the leaves, the flowers or pod bractless. The flowers are rose-colour in the axils. The corolla is as long as the calyx. The pod is glandular, hairy, as long as, or longer than, the calyx, cylindrical, oblong, bent back (hence *reclinata*). The seeds are 14-18, tuberculate. The plant is 1-6 in. high, flowering from May to July, and is a herbaceous annual.

Seaside Clover (*Trifolium maritimum*, Huds.=*T. squamosum*, L.).—The habitat of this plant is muddy salt marshes, stiff soil near the coast, ballast hills. The habit is prostrate, then ascending, spreading. The stem is rigid, nearly erect, the plant downy. The leaflets are oblong, inversely egg-shaped, blunt or acute, nearly entire. The stipules are broadly awl-like, linear, very long, spreading, herbaceous. The heads are egg-shaped to rounded, terminal, lengthening in fruit, shortly-stalked, with opposite leaves below. The calyx is strongly veined, the teeth awl-like, fringed with hairs at first, erect, not so long as

the corolla, afterwards broad, leaflike, spreading, acute, herbaceous, the 4 upper shorter than the ribbed tube, the lower longest and 3-veined, the tube hairy above, inversely conical in fruit. The flowers are small, pale-red. The pod is 2-valved. The plant is 6-18 inches in height, flowering between May and August, and is a herbaceous annual.

Buried Clover (*Trifolium suffocatum*, Linn.).—The habitat of this plant is sandy and gravelly places, and it is sublittoral, found on sandy sea-shores. The plant is prostrate in habit, smooth, with short, slender, spreading stems, buried in the sand in circular tufts (hence "buried"), with inversely heart-shaped leaflets on long leaf-stalks, the leaf-like organs egg-shaped, with a long point. The flowers are white, small, with a standard (which does not fall) with a membranous border, the teeth of the calyx bent back and lance-shaped, longer than the corolla, membranous. The plant is 1-3 inches in length, and flowers in June and July, being annual.

Upright Trefoil (*Trifolium strictum*, L.).—The habitat of this Trefoil is grassy places near the sea. The habit is erect or ascending. The stems are few, hairless, branched. The leaflets are toothed, with slender nerves, linear to lance-shaped, the upper oblong. The leafstalks are very short. The stipules are broadly egg-shaped, acute, toothed. The heads are terminal and axillary, broad, round, the flower-stalks short, rigid, longer than the leaves. The flowers are rose-purple, the corolla longer than the calyx. The calyx is stalkless, 13-veined, the tube bell-shaped, the teeth unequal, awl-like, spinose, spreading in fruit. The pods are obliquely rounded, flattened at the margin, beaked, the dorsal entire, thickened, projecting. The 1-2 seeds are egg-shaped, with a rather prominent radicle. The plant is 2-6 in. high, flowering in June and July, and is a herbaceous annual.

Slender Bird's Foot (*Lotus angustissimus*, L.).—The habitat of this species is dry banks near the sea. The habit is prostrate, then ascending. The stem is not wavy, and very hairy, dark-green, very slender. The leaflets and stipules are lance-shaped, acute, the former elliptic or blunt. The flowers are 1-2 on short flower-stalks, shorter than the leaves. The standard is broader than long, the claw linear, not so long as the wings, turning green. The fruit-stalk is twice as long. The calyx teeth are straight in bud, awl-like. The pods are 6 times as long as the calyx, linear. The seeds are rounded. The plant is 2-8 in. in height. Flowers may be found between June and August, and the plant is a herbaceous annual.

Hairy Annual Lotus (*Lotus hispidus*, Desf.).—The habitat of this species is dry banks near the sea, sunny places, roadsides. The habit is prostrate, then ascending. The plant is loosely or softly hairy. The stems are slender. The leaflets are inversely egg-shaped, lance-shaped, elliptic, acute. The stipules are half-heart-shaped. The flowers are 3-4 on each stalk, the latter longer

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than the leaves, and the calyx teeth are awl-like, straight in bud. The standard is inversely egg-shaped, the claw awl-like, longer than broad, longer than the wings, and does not turn green. The pods are rough, round, twice as long as the calyx. The seeds are more or less kidney-shaped. The plant is 2-12 inches long, flowering from June to August, and is a herbaceous annual.

Smooth Vetch (*Vicia levigata*, Sm.).—This vetch is allied to *V. lutea*. The plant is hairless (hence *levigata*). The flowers are blue or whitish. The calyx-teeth are unequal. The pods are smooth. Only a single specimen is known, that in Smith's herbarium. It is 6-15 in. high, flowering in June and July, and is a herbaceous annual.

Sea Pea (*Lathyrus maritimus*, Big.).—The habitat of this plant is sea shingle, pebbly sea-shores, on the E. coast, pebbly beaches. The habit is vetch-like. The stem is angular, not winged. The plant is hairless, bluish-green. The rootstock is black, long, and stout. The stem is creeping below, prostrate. The leaflets are in 3-5 pairs, oval, oblong, alternate, or more or less opposite, nerved, large, blunt. The leaf-stalks are sometimes curved back. The tendrils are short. The stipules are leaflike, large, heart-shaped to egg-shaped, half spear-shaped, stalkless. The flowers are variegated, purple, turning blue, on stout stalks, with 5-10 flowers, shorter than the leaves. The ultimate stalks are shorter than the calyx. The bracts are small. The pod is hairless, swollen, bent back, straight. The 6-8 seeds are smooth, rounded, one-third surrounded by the hilum. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER ROSACEÆ

Rubus dumnoniensis, Bab.—The habitat of this plant is sandy places among rocks by the coast. The stem is strong and stout, furrowed, with a few short, stiff hairs at first. The prickles are crowded, long, straight, and slender. The leaflets are large, dark-green above, felted below. The panicle is pyramidal, large, the partial rachis and long flower-stalks covered with fine acicles or needle-like points. The petals are large, roundish, milky-white. The contrasting colours, crowded long prickles, large panicle and white handsome flowers help to distinguish this species, and it is nearest to *R. incurvatus* and *R. rhamnifolius*.

Scotch or Burnet Rose (*Rosa spinosissima*, L.).—The habitat of this plant is open places, especially near the sea, heaths, and sand dunes. The plant has the shrub habit, and is small, erect, bushy, much branched. The stem is erect, the branches compact and short. The prickles are many, crowded, unequal, passing into bristles and glandular hairs, awl-like, nearly straight. The leaves are slightly or not glandular, the 7-9 leaflets are simple, toothed, simply or doubly, small, hairless above, broad. The flowers are small, white or pink, 3 or more, with long-pointed, simple sepals, the calyx-tube hairless, the limb simple, without

glands. The styles are free. The fruit is nearly round, with no disk, hairless, erect, black. The plant is 6-24 inches high, flowering from May to July, and is a deciduous shrub.

Rosa rubella, Sm.—The habitat of this plant is sands by the coast. It is a small spreading bush. The leaflets are simply or doubly toothed, elliptical to oval, rounded at the tip, hairless, without glands, rather acute. The leaf-stalks are long, densely glandular. The prickles are slender, straight, or acicles only. The flower-stalks are aciculate, hairy, glandular. The sepals are glandular on the back. The petals are cream-colour or reddish, the flowers 1 or 2. The styles are densely softly hairy. The fruit is egg-shaped, pitcher-shaped, tapered each end, hairy below, drooping when ripe, scarlet. The flowers and leaves are red-tinted.

ORDER CRASSULACEÆ

White English Stonecrop (*Sedum anglicum*, Huds.).—The habitat of this species is rocks, and banks chiefly near the sea, sandy places. The plant has the cushion habit, forming matted tufts. The plant is smooth, bluish-green or reddish. The stems are prostrate, then ascending. The flowering stems are leafy, ascending. The leaves are crowded, mostly alternate, gibbous below, ovate, oblong, fleshy, spurred below. The flowers are crowded, few, white or pink, with red spots, in short, smooth, bifid scorpioid cymes. The sepals are short, blunt. The petals are lance-shaped, acute-pointed, keeled. The carpels are pink. The plant is 3-5 in. high, flowering from June to August, and is a herbaceous annual.

ORDER ONAGRACEÆ

Evening Primrose (*Oenothera odorata*, Jacq.).—The habitat of this plant is sandy ground on the coasts of Somerset and Cornwall. The habit is erect. The stems are purplish, branched, with spreading hairs. The foliage is bright-green. The leaves are short-stalked, the lower nearly flat, with green or purple nerves, the radical leaves linear to lance-shaped, toothed, wavy, the stem-leaves egg-shaped to lance-shaped, narrowed. The flowers are large, bright-yellow, fragrant (hence *odorata*), becoming red. The petals are longer than the stamens. The capsule is long, cylindrical, club-shaped, downy. The plant is 2-3 ft. high, flowering from July to September, and is a herbaceous perennial.

Oenothera Lamarckiana, Ser.—This species is a casual which occurs in waste places, and is well known from the interesting experiments made by De Vries upon the variations to which the plant is liable, which he calls mutations. It differs from *Oen. biennis* (Sect. XII, Vol. V) in having more pointed radical leaves. The style is longer than the stamens. The capsule is less hairy. The plant is 2-4 ft. high, flowering between July and September, and is a herbaceous biennial.

Oenothera ammophila, Focke.—This plant is a North American species which has been found on

the Somerset coast, and has become naturalized on the Somerset coast.

ORDER UMBELLIFERÆ

Slender Hare's Ear (*Bupleurum tenuissimum*, L.).—The habitat of this plant is salt marshes, pastures near the sea, and waste places. The habit is more or less the grass habit. The stem is solid, wavy, ribbed, wiry, very slender, branched, erect or prostrate. The leaves are linear-lance-shaped, with a long, narrow point, 3-nerved, rigid, the lowest slightly swollen upwards. The bracts are awl-like, unequal, 3-5; the bracteoles the same. The flowers are yellow and very small, in umbels or stalkless, in the axils or terminal, the partial umbels of 3-5, overtopping the involucle, in a raceme, or more or less spike-like along the branches. The fruit is broad, small, granulate between the 5 prominent ridges. There are no vittæ. The plant is 6-12 in. in height, and flowers between July and September, being a herbaceous annual.

Wild Celery (*Apium graveolens*, L.).—The habitat of this plant is wet places, marshes and ditches, especially near the sea. The plant is erect in habit, and has a strong scent. The root is spindle-shaped. The stem is smooth, erect, stout, grooved, branched, and leafy. The leaves are pinnate, with lobes each side of a common stalk, or trifoliate. The leaflets in the upper leaves are wedge-shaped, those of the radical leaves are stalked, round-lobed. The flowers are small, greenish-white, in stalkless or shortly-stalked terminal or lateral umbels, with no partial involucres, with one or two leaves, with leaflets in threes. The petals are hooded. The fruit is round. The styles are short, bent back, and spreading. The plant is 1-3 ft. high, flowering between June and August, and is a herbaceous biennial or perennial.

Fennel (*Foeniculum vulgare*, L.).—The habitat of this plant is sea cliffs, rocks, and walls. The habit is erect. The stems are branching, round below, finely furrowed, polished, filled with pith or nearly solid. The leaves are dark-green, much divided, 3-4-pinnate, shortly-stalked, with many slender, linear lobes, hair-like, limp, channelled, the upper long. The flowers are small, yellow, in large bluish-green, concave umbels, with many rays. The fruit is egg-shaped. The plant is 3-5 ft. high, flowering in July and August, and is a herbaceous perennial.

Lovage (*Ligusticum scoticum*, L.).—The habitat of this plant is rocky coasts, sea cliffs in northern Britain, rocks on the northern sea-coast. The habit is the rosette habit. The rootstock is stout, branched. The stems are erect, little branched, nearly simple, hollow, round, grooved, herbaceous, tinged with red. The leaves are dull-green, mainly radical, twice ternate. The leaflets are egg-shaped, rhomboidal, or round to heart-shaped, toothed, opaque, large, lobed or cut, scalloped. The flowers are white or pink, nearly regular, in umbels with 8-12 rays. The involucres consist of 5-7 leaves, the bracts are few, and the bracteoles

linear to awl-like. The calyx is 5-toothed. The fruit is brown, the ridges winged, the interstices with 3, the commissure with 6 stripes. The seed is free. The style is short, bent backwards. The plant is 9 in. to 3 ft. high, flowering in July and August, and is a herbaceous perennial.

Hog's Fennel (*Peucedanum officinale*, L.).—The habitat of this plant is maritime marshes and cliffs, salt marshes. The habit is erect. The stems are rounded, solid, furrowed. The leaves are five times ternate, oblong. The leaflets are linear, limp, long and narrow, acute. The flowers are small, yellow, in a large umbel, on spreading, more or less opposite, branches, with many rays, spreading. The central flowers are imperfect. The involucre consists of 3 bracts which soon fall, and the bracteoles are short and thread-like. The ultimate flower-stalks are slender, longer than the fruit. The fruit has narrow wings, and the stripes of the commissures are superficial. The styles are stout, bent back. The plant is 2-3 ft. high, flowering from July to September, and is a herbaceous perennial.

ORDER DIPSACEÆ

Sea Scabious (*Scabiosa maritima*, L.).—The habitat of this plant is sandy places. The habit is the rosette habit more or less. The leaves are deeply-divided nearly to the base. The flower-heads are purple. The involucel and its base are furrowed. The corolla is 5-cleft. The plant is 9-18 in. high, and flowers in July and August, being a herbaceous perennial.

ORDER COMPOSITÆ

Sea Aster (*Aster Tripolium*, L.).—The habitat of this plant is muddy salt-marshes. The plant is erect in habit. The root is spindle-shaped, with long fibres. The stem is hairless, leafy, corymbose above, with few branches, stout. The leaves are spoon-shaped, linear-lanceshaped, or inversely egg-shaped, succulent or fleshy, smooth, scattered, faintly 3-nerved, slightly toothed, the upper linear. The flowerheads are in a corymb, large, the disk florets yellow, complete, the ray florets purple, female, 20-30. The disk florets are tubular below, bell-shaped above. The flower-stalk is slender. The involucel is overlapping, with blunt phyllaries and membranous, the inner longer, closely pressed, few, oblong. The fruit is hairy. The pappus is dirty-white. The plant is 1-3 ft. high, flowering in August and September, and is a herbaceous perennial.

Golden Samphire (*Inula crithmoides*, L.).—The habitat of this plant is maritime rocks, or salt-marshes, rocks, and muddy salt-marshes. The habit is erect. The plant is yellowish-green, hairless. The stem is stout, leafy, slightly branched near the top, each ending in a solitary head. The leaves are linear, stalkless, blunt or with 3 points, fleshy, succulent, narrow below, entire or with 2-4 shallow lobes. The flowerheads are few, in simple corymbs on long stalks, with orange disk

BRITISH FLORA

florets, complete, and female ray florets, in 1 row, yellow. The involucral bracts are linear-lance-shaped, taper-pointed. The ligule is short. The fruit is round in section, silky. The pappus has an outer series of short bristles or scales, and is rigid, unequal, dirty-white. The plant is 6-18 in. high, flowering in July and August, and is a herbaceous perennial.

Sea Cottonweed (*Diotis maritima*, Cass. = *D. candidissima*, Desf.).—The habitat of this plant is sandy shores and sea shingle. The habit is prostrate below, then ascending. The rootstock is woody, creeping. The stems are numerous, stout, branched above. The plant is adapted to dry conditions densely cottony (hence Cottonweed), and white (hence *candidissima*). The leaves are stalkless, thick, blunt, entire or toothed, oblong, scalloped, and persist. The flowerheads are yellow, small, in dense, terminal, clustered corymbs. The involucre is cottony, the scales of the receptacle oblong, long-pointed, woolly at the tip. The fruit is smooth, hairless, 5-ribbed, curved. There is no pappus. The plant is 6-18 in. high, flowering in August and September, and is a herbaceous perennial.

Matricaria maritima, L.—The habitat of this plant is sea-coasts. The rootstock is woody. The leaf-segments are short, fleshy, shining, and succulent. The stem is ascending. There are no barren shoots. The heads are fewer. The receptacle is narrower. The spaces between the ribs of the fruits are narrower. The plant flowers between June and September, and is a herbaceous perennial.

Sea Wormwood (*Artemisia maritima*, L.).—The habitat of this plant is salt-marshes and ditches. The habit is erect, prostrate, or ascending. The rootstock is woody, branched. The stem is branched, woolly. The leaves are white, woolly below, deeply divided nearly to the base, the segments linear, blunt, narrow, numerous, spreading. The flowerheads are drooping, few, crowded, oblong, in short panicle-like spikes, the florets reddish, all fertile, narrow. The receptacle is hairless. The phyllaries are oblong, the outer woolly, the inner membranous. The plant is 9-18 in. high, flowering in August and September, and is a herbaceous perennial.

Kamchatka Wormwood (*Artemisia Stelleriana*, Besser).—The habitat of this plant is seashores. The plant is densely white-felted. The leaves are deeply divided nearly to the base, with broad, blunt segments. The flowerheads are pale-yellow in simple or nearly simple racemes, the heads large, erect, rounded, bell-shaped. The stem-leaves and phyllaries are all densely white-felted. The plant is 1-2 ft. high, flowering in August, and is a herbaceous perennial.

Senecio spathulifolius, D.C.—The habitat of this plant is maritime rocks, sea cliffs, calcareous rocks, and the plant is rare. It has been regarded as a variety of *S. campestris*. The plant is shaggy. The plant has the rosette habit. The stem is simple, and is tall and stout. The radical leaves are ovate to spoon-shaped, arachnoid

(covered with a cottony down) above, woolly below. The stem-leaves are enlarged below, ovate to oblong, narrowed into broadly-winged stalks. The upper leaves have no stalks, and are linear or lance-shaped, clasping. The flower-heads are yellow, the involucre woolly. The fruit is stiffly hairy. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous biennial or perennial.

Slender - flowered Thistle (*Carduus pycnocephalus*, L.).—The habitat of this plant is sandy places near the sea. The habit is erect. The stem is erect, branched, hoary, the leaves densely hoary or cottony beneath. The branches are long and slightly winged. The florets are purple in 1-3 large heads, with spreading phyllaries. The fruit is minutely pitted with several rows of pappus. It is 1-4 ft. in height, and flowers from June to August, being biennial.

Jersey Knapweed (*Centaurea paniculata*, L.).—The habitat of this plant is sandy fields, shores, and slopes. The habit is erect, the stem being branched, forming a panicle above. The stems and branches are rigid, covered with a cottony down, slender, with acute angles. The lower leaves are divided nearly to the base, with linear segments. The heads are oblong with purple flowers. The pappus is not so long as the fruit, consisting of scaly bristles. The plant is 1 ft. in height, flowers in July, and is a herbaceous biennial.

False Jersey Knapweed (*Centaurea aspera*, L.).—The habitat of this Knapweed is sandy places near the sea. The habit is prostrate, then ascending. The stem is slender, with slender branches, spreading, downy, the tips cottony. The leaves are stalkless, linear, entire. The flower-stalks are leafy, the flowerheads brownish red, the involucre rounded, the leathery bracts tipped with turned-back spreading spines, the heads solitary and terminal. The fruit is grey and downy, the pappus not so long as the fruit. The plant is 1-2 ft. in height, flowering from June to September, and is a herbaceous perennial.

St. Barnabas Star Thistle (*Centaurea solstitialis*, L.).—The habitat of this thistle is fields, dry pastures, and other places near the sea. It is often introduced with Lucerne, Sainfoin, and usually found on cultivated land. The habit is erect, the rigid stems numerous, being branched, winged, cottony, the lower leaves with lobes larger towards the tip, the upper entire, the base running down the stem. The terminal solitary heads are borne on flower-stalks, the flowerheads yellow, with long, spreading upper bracts, the central involucral spines long and slender, needle-like. The fruit is white, with soft pappus as long as the fruit. The plant is 1-2 ft. high, and flowers between July and September, being a herbaceous annual.

Hieracium subramosum, Lonrr.—The habitat of this species is maritime. It has not been met with since 1876, when it was found at Pethy Cur by Syme. The stem is branched, tall, hairy, stiffly hairy below, woolly-felted above. The few,

2-3, basal leaves form a false rosette, and are egg-shaped to lance-shaped, elliptic, blunt, nearly entire, the inner lance-shaped, toothed. The 3-5 stem-leaves are nearly stalkless, acute, like the basal, sharply toothed, all narrowed below, bluish-green below, stiffly hairy on the midrib and margin. The panicle forms a kind of corymb, branched, with 1-2 lower ascending branches, with few flowers. The stalks bear bracteoles, and are stiffly hairy, woolly-felted, glandular. The few heads are rounded to egg-shaped. The phyllaries are dark green, linear, narrow, lance-shaped, blunt, the inner rather acute, with a pale border, woolly-felted, hairy and glandular. The ligules are fringed with hairs. The styles are yellow turning brown. The plant is 1-2½ ft. high, flowering in June, and is a herbaceous perennial.

ORDER PLUMBAGINACEÆ

Jersey Thrift (*Statice* (*Armeria*) *plantaginea*, All.).—The habitat of this plant is dry sandy places, sandy banks. The plant has the rosette habit. The plant is hairless and is more rigid, stouter, and larger than *Statice* (*Armeria*) *vulgaris*. The leaves are linear-lance-shaped, narrowed into long points, the margins cartilaginous or membranous, wavy when dry, 3-5 veined. The scapes are rough, taller. The involucre is longer, less deeply cut, the outer bracts with a long, herbaceous point, triangular or lance-shaped, abrupt, or inversely egg-shaped, with a broad, membranous margin, blunt. The calyx-teeth are long, bristle-like, awned. The flowers are darker, on shorter stalks. The plant is 4-20 in. high, flowering between June and August, and is a herbaceous perennial.

Remote-flowered Sea Lavender (*Limonium* (*Statice*) *humile*, Mill. = *S. rariflora*, Bab. non Drej. = *S. Bahusiensis*, Fr.).—The habitat of this plant is muddy salt-marshes. The plant has the rosette habit. The stem is somewhat angular, branched below, not forming a corymb above, paniced. The leaves are oblong to lance-shaped, stalked, blunt-pointed, 1-ribbed, faintly-veined. The flowers are distant, purplish, in long spikes, erect or bent inwards. The spikelets are loose, or 1-3 flowered, arranged one side of the stalk, not overlapping. The calyx-segments are acute, finely-toothed. The outer bract is keeled on the back, pointed, the inner 1-1½ as long as the intermediate. The plant is 4-12 in. high, flowering in July and August, and is a herbaceous perennial.

Limonium (*Statice*) *recurvum*, C. E. Salmon = *S. Dodartii*, Bab. Man., Ed. 5-8).—The habitat of this plant is rocky shores. The plant has the rosette habit. The stem is rigid, with thick branches, not barren, short, and often simple, usually not branched below. The leaves are inversely egg-shaped to spoon-shaped, not pinnately veined (as they are in the next), narrowed into a broadly-winged stalk, 3-veined below. The flowers are purple, in nearly-erect, linear, thick spikes, the panicle branches short, often in pairs, spreading. The spikelets are 2-4-flowered, stout,

crowded, spreading, overlapping, in 2 rows. The calyx-segments are without intermediate teeth, blunt, and entire. The inner bracts are inversely egg-shaped, very blunt, with white, or pinkish, margins. The anthers are linear. The plant is in flower in July and August, and is a herbaceous perennial.

Upright Sea Lavender (*Limonium* (*Statice*) *binervosum*, C. E. Salmon = *S. auriculaefolia*, Hook. non Vahl. = *S. occidentalis*, Lloyd = *S. spatulata*, Hook. non Desf.).—The habitat of this plant is rocky shores. The plant has the rosette habit. The plant is hairless. The rootstock is short, stout, branched. The stem is branched from near the middle, the branches repeatedly forked, long, sometimes rough. The leaves are lance-shaped to spoon-shaped, acute, narrowed to a short stalk below, blunt, 3-nerved below. The branches of the panicle are all flowering, ascending, the few lower often flowerless, the scapes slender, wavy, forked. The spikelets are 2-4-flowered, slender, overlapping, in 2 rows, erect or ascending, and the spikes are linear, nearly erect. The calyx-segments are blunt, entire, without intermediate teeth. The inner bracts are oval, with a broad, membranous edge, pink. The anthers are oval. The plant is 4-12 in. high, flowering in July and August, and is a herbaceous perennial.

Limonium (*Statice*) *bellidifolium*, D. C. non Dum. = *S. reticulatum*, Huds. = *S. caspia*, Willd.—The habitat is salt-marshes, and muddy sea-shores. The plant has the rosette habit. It is hairless, rough to granular, especially above. The scape is stout or slender, much branched near the base, erect, or prostrate when it forms a circle. The leaves are not persistent, 1-3 veined, small, inversely egg-shaped, lance-shaped, acute, or blunt-pointed. The leaf-stalk is as long as the blade. The branches are erect, spreading, branched, bent back, the lower barren, much divided, simple, and all flowering. The branchlets are much divided. The scales are triangular to acute, the larger with long, narrow points, the lower leafy occasionally. The spikes are scorpioid, short, dense, or longer and loose. The spikelets are 2-3-flowered, in 2 rows, densely overlapping, close or distant. The outer bract is egg-shaped, blunt, membranous, faintly-veined below. The middle bract is irregularly oblong to inversely egg-shaped, divided or blunt, rounded, membranous, veined. The inner bract is long, egg-shaped, membranous, more than half as long as the outer bract. The bracteoles are oblong to inversely egg-shaped, membranous, rounded or blunt. The calyx is irregularly hairy below, sometimes hairless, the lobes triangular to acute, rounded, the veins not running beyond the base of the lobes, or rarely so far, white, finely toothed, with no intermediate teeth. The corolla is small, pale lilac. The plant is 1½-16 in. high, flowering in July and August, and is a herbaceous perennial.

Limonium (*Statice*) *lychnidifolium*, Cir.=var. *b*, *corymbosum*, Boiss.—The habitat of this plant is maritime rocks. The plant has the rosette habit.

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The root-stock is stout and woody. The stem is stout, branched one-third to four-fifths of its length, tapering upwards with barren branches occasionally. The leaves are inversely egg-shaped to spoon-shaped, shortly blunt-pointed, with broadly-winged stalks, are 5-9-veined, thick, leathery. The scales are large, egg-shaped to triangular. The inner bracts are roundish, twice as long as the outer, with a bright-red band and membranous border. The spikelets are 2-flowered, densely overlapping, in 2 rows. The spikes are thick, spreading or nearly horizontal. The calyx-segments are short, with blunt ribs, hairy. The anthers are oblong. The plant is 4-12 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER GENTIANACEÆ

Centaurium (Erythrea) latifolium, Sm.—The habitat of this plant is sands by the sea. The plant has the rosette habit. The stem is short, more or less simple, branched, 3-cleft at the top. The lowest leaves are more or less round. The upper leaves are egg-shaped, oblong, 5-7-nerved, blunt. The flowers are rose-colour, more or less in a head or cyme, or in terminal, forked, round, compact tufts, with short stalks. The tube of the corolla is as long as the calyx, the lobes lance-shaped. The flowers are half as large as in *Centaurium umbellatum*. The plant is 2-4 in. in height, flowering in July and August, and is a herbaceous annual.

Centaurium vulgare, Raf.=*C. littoralis*, Fr.—The habitat of this plant is sandy seashores. The habit is as in the last. The stem is simple (1 or more). The radical leaves are narrow, numerous, spoon-shaped, crowded, the upper oblong, linear, blunt, narrowed below. The flowers are rose-colour, stalkless, between the floral leaves, in dense cymes, or corymbose, usually 3-forked, with long branches. The corolla-tube equals the calyx, and the lobes are oval, oblong, blunt. The plant is 2-6 in. high, flowering between June and September, and is a herbaceous annual.

Centaurium pulchellum, Druce (= *C. ramosissimum*, Pers.).—The habitat of this plant is sandy ground. The habit is as in the last. The stem is simple, with 1 flower, or much-branched with several, acutely square in section. The leaves are egg-shaped to oblong, the upper lance-shaped. The radical leaves are few. The flowers are without bracts, rose-colour, all stalked, terminal, and in the axils, in a loose cyme or forked panicle, with a flower in each fork. The corolla tube is longer than the calyx, the lobes elliptic to oblong, lance-shaped, blunt. The lateral flowers are distant from the floral leaves. The plant is 1-6 in. high, flowering from June to September, and is a herbaceous annual.

Small Yellow Gentian (*Microcalca filiformis*, H. & L.).—The habitat of this plant is sandy bogs, damp sandy places. The plant has the rosette habit. The stem is slender, threadlike (hence *filiformis*), forked, angled, simple or branched above,

the branches more or less erect. The radical leaves are linear to lance-shaped, the stem-leaves awl-like, all stalkless. The flowers are solitary, yellow, with the parts in fours, the calyx bell-shaped, with broad, triangular, acute lobes, the corolla-lobes blunt, as long as the tube. The flower-stalks are stout and very long. The stigma is pin-headed. The capsule is round. The plant is 4-8 in. in height, flowering between July and October, and is a herbaceous annual.

ORDER BORAGINACEÆ

Blue Gromwell (*Pneumaria (Mertensia) maritima*, Don).—The habitat of this plant is northern seashores and sea shingle. The habit is prostrate, then ascending. The root-stock is fleshy, and the plant is stoloniferous. The stems are leafy, much-branched. The plant is hairless, bluish-green. The leaves are fleshy, egg-shaped, acute, rough, with hard dots, in 2 rows, the lower stalked, the upper stalkless, with prominent horny points (when dry), and are said to taste like oysters. The flowers are purplish-blue and pink, in forked cymes, with 2 opposite, leafy bracts below. The flower-stalks are short, curved back in fruit. The calyx in fruit is angular. The corolla is 5-lobed to the middle, with yellow folds or protuberances in the throat. The nutlets are flattened, large, fleshy, free, smooth, and form a pyramid, the membranous outer coat becoming inflated and papery, rounded on the back, and longer than the calyx. The seed-cavity is larger than the seeds. The plant is 1-2 ft. high, flowering between May and August, and is a herbaceous perennial.

ORDER SCROPHULARIACEÆ

Euphrasia scotica, Wettst.—This plant is distinguished by its long and slender habit, the leaves being shorter and narrower with longer internodes and more compact flowers than in *E. minima*, to which Mr. Beeby reduced it as a variety, in which opinion Mr. F. N. Williams (Prodr., p 307) concurs. The stem is firm, simple, or branched at or below the middle. The leaves are rigid, nearly hairless, with few short hairs on the margin, ovate to oblong, with 6-8 teeth. The stem-leaves have blunt teeth. The spike is interrupted below. The lower bracts have blunt teeth. The upper bracts have a wedge-shaped base, and the teeth have a short awn, the lower ones being bent inwards. The flowers are white or violet and white. The calyx-teeth are broadly triangular, acute, and clothed with small bristles, like the veins. The corolla is small. The upper lip has notched lobes, the lower is the same length, longer than the tube. The capsule is oblong or narrow below, fringed and covered with hairs above.

Euphrasia occidentalis, Wettst.—The habitat of this plant is marlith. The whole plant is downy. The stem is stout, ascending, branched below. The leaves are clothed with small stiff bristles and short glandular hairs. The stem-leaves are ovate, or more or less acute, with 6-10 acute teeth.

The spike is dense as a rule. The flowers are whitish. The bracts are broadly ovate, acute, with 8-14 acute teeth. The calyx has small stiff bristles, and glandular and lance-shaped, narrowly-pointed teeth. The corolla is small, the lobes of the upper lip entire or notched. The capsule is elliptic, notched, fringed with hairs.

Euphrasia foulensis, Towns.—This plant is without hairs or slightly, softly downy. The stem is stout, simple, or but little branched. The leaves bear few hairs. The stem-leaves are few, distant, ovate, blunt, with 4-6 blunt teeth. The spike lengthens a little. The flowers are purple. The bracts are not so large as in the last, and rather distant, sometimes acute, with acute-pointed teeth. The calyx is devoid of hairs, or there may be a few bristles, and the teeth are triangular to lance-shaped. The corolla is small, with the lobes of the upper lip entire. The capsule is elliptic, long, notched, fringed with hairs, longer than the calyx-teeth.

Euphrasia salisburgensis.—The habitat of this plant is limestone pavements and cliffs, walls, sand-dunes, or non-calcareous rocks. As a rule it appears to be a lowland plant, but ascends to 300 metres. The plant belongs to the group with narrow leaves, usually more than twice as long as broad. The stem is simple or branched below. The leaves are without hairs, or have few, very small, bristles. The stem-leaves are lance-shaped, 2-5 times as long as broad. They are very acute with 4-6 distant, long, spreading, awned teeth. The spike finally is much lengthened. The flowers are white or bluish-purple or violet. The bracts are ovate to lance-shaped, with 4-10 (usually 6) teeth, similar. The calyx is devoid of hairs, or has a few very small bristles, with triangular to lance-shaped teeth. The corolla is small, the lobes of the upper lip turned back, notched, or with a few small teeth. The capsule is wedge-shaped to long, blunt to notched, without hairs, or slightly hairy above.

ORDER OROBANCHACEÆ

Broomrape (*Orobanche amethystea*, Th.).—This plant is a native species, parasitical on *Daucus gummifer*, in habitats near the sea, as a rule. The habit is like that of Common Broomrape, with which it was united as a sub-species. The corolla is purple or white, and much curved below, the upper part almost straight, extending forwards at first, bent down after flowering. The middle lobe of the lower lip is the largest, serving as an alighting-place for insects. The lobes of the stigma are partly attached, and it is purple, reddish-brown, or yellow. The sepals are entire, egg-shaped, then awl-like at the tip, many-veined. The plant is 6-24 in. in height, and flowers in June and July, being an annual.

ORDER PLANTAGINACEÆ

Buckhorn Plantain (*Plantago Coronopus*, L.).—The habitat of this plant is all the maritime coasts,

dry and gravelly commons inland, gravelly barren spots near the sea, and it becomes more maritime northwards. The plant has the rosette habit. The plant is downy, with long hairs, but varies much in this respect and in size. The leaves are linear, deeply divided nearly to the base, or toothed, 1-ribbed, and may be entire. The scape is round, hairy, ascending, equaling or exceeding the leaves. The spikes are slender, many-flowered, short or long, cylindrical. The bracts are awl-like, erect, the base egg-shaped, exceeding the sepals, which are blunt. The lateral sepals have a membranous wing fringed with hairs. The corolla-tube is downy or hairless. The stamens are pale-yellow. The seeds are pale-brown, with white extensions at each end, and mucilaginous, adhering to the soil when they fall. The plant is 1-8 in. high, flowering between June and August, and is a herbaceous annual.

ORDER ILLECEBRACEÆ

Whorled Knot Grass (*Illecebrum verticillatum*, L.).—The habitat of this plant is wet sandy and boggy places. The habit is prostrate, then ascending. The stem is slender, hairless, and the plant is branched from the root. The branches are ascending, covered with leaves and flowers in tufts. The leaves are round, variable, egg-shaped, spoon-shaped, oblong, hairless. The flowers are in whorls (hence *verticillatum*) in the axils, small, with a short stalk, not so long as the leaves. The plant is 2-8 in. high, flowering in July and August, and is a herbaceous perennial.

Strapwort (*Corrigiola littoralis*, L.).—The habitat of this plant is sandy shores and dry places, damp sandy spots near the sea. The habit is prostrate or ascending. The stems are many, slender, leafy, amongst the flowers. The leaves are linear, lance-shaped, narrowed into an obscure stalk. The stipules are half arrow-shaped, oblong. The flowers are white, stalked, small, crowded, in small clusters, or terminal cymes. The petals and sepals are the same size. There are 3 stigmas, and the anthers are small. The plant is 3-9 in. in length, and flowers between July and September, being a herbaceous annual.

Smooth Rupturewort (*Herniaria glabra*, L.).—The habitat of this plant is sandy soils and dry places. The habit is prostrate or subterranean. The stems are herbaceous, numerous, tufted, hairless or downy, clothed with bent-down hairs. The autumnal shoots are ascending, irregularly branched, with spreading, not overlapping leaves. The lateral branches resemble leafy spikes from the close clusters. The plant is pale yellowish-green. The root is woody. The leaves are oblong, hairless, narrowed below. The flowers are small, green, stalkless, in axillary spike-like clusters. The calyx is hairless or thinly hairy. The fruit is 1-seeded. The plant is 4-6 in. long, flowering in July and August, and is a herbaceous annual, biennial, or perennial.

Herniaria ciliata, Bab.—This plant was regarded as a variety of the last, than which it is

much stouter, forming larger tufts, with broader leaves, larger, whiter stipules. The habit is prostrate. The plant is dark-green. The root is strong and woody, the stem spreading from the crown, but scarcely rooting until the autumn, when it is prostrate, with regular alternate branches, the leaves in two rows, overlapping. The stem is shrubby, with small bent-down hairs on the upper surface only. The leaves are round to egg-shaped, fringed with hairs (hence *ciliata*). The flowers are in clusters of 1-3, in small distinct clusters, stalkless, in the axils of the lateral branches. The flowers are larger than in the last. The sepals are bristle-pointed. The plant flowers in July and August, and is a herbaceous, diminutive, shrub-like perennial.

Hairy Rupture Wort (*Herniaria hirsuta*, L.).—The habitat of this plant is sandy ground, waste places, cultivated ground. The habit is prostrate. The stem is herbaceous, clothed with straight, spreading hairs (hence *hirsuta*). The leaves are elliptic, oblong, hairy, narrow both ends, yellowish-grey. The calyx is hairy like a small bur. The plant is 4-6 in. high, flowering in July and August, and is a herbaceous annual.

ORDER CHENOPODIACEÆ

Goosefoot (*Chenopodium botrysoides*, Sm.).—The habitat of this plant is muddy coasts or tidal rivers, moist sandy places near the sea, on the S.E. coast. The habit is erect or prostrate. The leaves are thick, fleshy, more or less triangular, slightly toothed. The plant when fresh is succulent, brittle, limp when dry. The flowers are in a dense, compound spike, leafless above. The seeds are vertical, small, smooth, shining, keeled at the edge. The pericarp is loose. The plant is 2-6 in. high, flowering in September, and is a herbaceous annual.

Sea Beet (*Beta maritima*, L.).—The habitat of the plant is maritime places, muddy sea-shores. The habit is pyramidal. The root-stock is thick and fleshy, branched, tapered into a fleshy root. The stems are prostrate below, long, spreading in a circle, then ascending, numerous, branched, angular, striped, ascending at the apex. The leaves are fleshy, shining, the lower rhomboid, triangular to egg-shaped, the upper lance-shaped, narrowed into a broad leafstalk. The flowers are green, in long, clustered spikes, slender, simple, leafy, 2-3-flowered, stalkless. The bracts are linear to lance-shaped, longer than the clusters. The perianth-segments have entire keels, the outer (sepals) bent inwards, blunt, with membranous margins. The stigmas are lance-shaped. The plant is 1-3 ft. high, flowering between June and October, and is a herbaceous perennial.

Narrow-leaved Sea Orache (*Atriplex littoralis*, L.).—The habitat of this plant is salt-marshes, brackish marshes, banks. The habit is erect. It closely resembles *A. patula*, but has narrower, usually entire leaves, not spear-shaped, or seldom rhombic. The plant is mealy. The stems are striped, with ascending branches. The leaves are

narrow, entire or toothed, linear-oblong to lance-shaped. The upper leaves are very narrow. The flowers are in slender, terminal, clustered spikes. The fruiting perianth is rhomboidal, triangular, toothed, tubercled on the back. The seeds are nearly smooth, shining, all vertical. The plant is 1-2 ft. high, flowering between July and September, and is a herbaceous annual.

Orache (*Atriplex patula*, L.).—The habitat of this plant is cultivated and waste ground, where it is common. It may be native on the seashores of Great Britain. The habit is erect or ascending. The plant is mealy, deep green. The stem is striped, with spreading branches. The lower leaves are opposite, rhombic, or spear-shaped with ascending, blunt teeth, from a wedge-shaped base, entire or coarsely toothed, acute. The flowers are in simple spikes usually leafy below, the bracts broad. The female perianth-segments are rhombic, triangular, toothed, tubercled, rarely hardened, mixed with the males, the axillary solitary. They are spear-shaped, blunt at the base or triangular. The seeds are, when large, dark brown, flattened, the smaller smooth, shining. The plant is 1-4 ft. high, flowering from July to September, and is a herbaceous annual.

***Atriplex Babingtonii*, Woods.**—The habitat of this plant is sea-coasts. The plant has been regarded as a subspecies of *A. patula*. The habit is as in the last. The plant is pale and very mealy. The stems are spreading, prostrate then ascending, with spreading branches. The leaves are egg-shaped, usually opposite, triangular, or rhomboid to egg-shaped, entire, wavy, the upper lance-shaped, 3-lobed below, toothed. The flowers are in distant, axillary and terminal, clusters, the spikes loose and leafy, few-flowered. The fruiting perianth is rhomboidal, acute, toothed, tubercled on the back, the sepals united below at the hardened base, or to the middle. The seeds are minutely tuberculate, all vertical, large, pale. The plant is 6-36 in. high, flowering between July and September, and is a herbaceous annual.

***Atriplex laciniata*, L.**—The habitat of this plant is sandy sea-coasts. The habit is prostrate then ascending. The plant is clothed with persistent, silvery scales. The stem is buff or reddish, not striped, angular, branched from the base, the branches spreading, stout or slender. The lower leaves are opposite, mealy below, entire or toothed, acute or blunt, rhombic to egg-shaped, wedge-shaped below, the upper the same or spear-shaped, shortly-stalked. The floral leaves are stalkless. The male flowers are in short, dense, naked spikes, the females in the axils, with a few males between. The fruiting perianths are united to the middle, broader than long, rhomboidal, 3-lobed, with blunt, lateral lobes ending in tubercles, 3-ribbed on the back, entire, toothed or lobed. The disk is prominently veined or wrinkled, rarely tubercled. The seeds are reddish-brown, large, much flattened at the border, rough, opaque. The plant is 6-36 in. in height, flowering between July and October, and is a herbaceous annual.

***Atriplex Calotheca*, Fr.**—It differs from *A. has-*

tata, L., of which it has been regarded as a variety, only in having a prostrate stem, more fleshy leaves, and sepals deeply cut, with slender teeth. It is 6-18 in. high.

Sea Purslane (*Atriplex portulacoides*, L.).—The habitat of this plant is muddy maritime cliffs and marshes, muddy salt-marshes. The habit is shrubby. The plant is mealy, covered with small, persistent, greyish-white scales. The rootstock is woody and branched. The stem is woody below, prostrate, wavy, the branches erect. The leaves are silvery white, usually opposite, with a rounded tip, spoon-shaped to lance-shaped, entire, narrow below, the upper narrower, linear. The flowers are in terminal, interrupted spikes or panicles, leafy below. The fruiting perianth is cupular, stalkless, wedge-shaped, inversely triangular to rounded below, with 3 unequal or equal lobes above, rough on the back, flattened at the border. The seed is rough, chestnut colour. The plant is 1-2 ft. high, flowering from August to October, and is a herbaceous perennial.

***Atriplex pedunculata*, L.**—The habitat of this plant is muddy shores, muddy maritime marshes, and salt-marshes. The habit is herbaceous. The plant is mealy. The stem is wavy, branched or simple, slender, round. The leaves are narrowly inversely egg-shaped, oblong, narrow below, entire, with a rounded tip, shortly-stalked, the upper narrower. The flowers are in terminal spikes, reduced to axillary clusters, more or less stalkless, one or two fruiting in each cluster, when the stalk lengthens and spreads. The fruiting perianths are long-stalked, bell-shaped, wedge-shaped, with 2 bent-back lobes, with 2 intermediate teeth, 2 lateral lobes. The plant is 3-8 in. high, flowering from August to October, and is a herbaceous annual.

Glasswort (*Salicornia europaea*, L. = *S. procumbens*, Sm., seg., *S. herbacea*, L.).—The habitat of the plant is muddy seashores, salt-marshes, maritime and inland, it being abundant and often social. The habit is ascending to erect. The root is slender. The stems are herbaceous, leafless, the joints succulent, compressed, thickened upwards, notched, all the branches flowering, spindle-shaped. The plant is bright green. The internodes are contracted above and below, the lower woody, slender, the upper fleshy. The flowering internodes are in short spikes. The flowering spikes are tapering, blunt, cylindrical, each spike has 8-16 flowering segments. The flowers are nearly equal in size, 3, the centre one two-thirds the way up the segment, with 1 stamen as a rule, or with a secondary rudimentary one, and if there are two they ripen successively. The styles project. The fruiting perianth is narrowly winged at the top. The seed is egg-shaped or oblong, green, with curled hairs. The plant is 6-18 in. high, flowering in August and September, and is a herbaceous annual.

***Salicornia europaea*, L. (*forma stricta*, Moss. = *S. stricta*, Dum.).**—The habitat of this plant is erect. The stem is erect, much-branched, vigorous, the branches in clusters, the terminal spikes usu-

ally very long. The spikes are cylindrical, 2-3 in. long. The plant is always green in colour. The plant is a herbaceous annual.

***Salicornia ramosissima*, Woods.**—This plant is polymorphic in colour, size, and branching. The colour is apple-green or grass-green to dingy red and crimson. It is usually much-branched (hence *ramosissima*), even bushy, but less branched and branchless forms occur. It is 30 mm. in height. The vegetative segments are about 10 mm., rarely 20 mm. long. The terminal flowering spikes are not so long as in *S. europaea*, not more than 5-10 mm. long, acute, tapering, with 4-6 flowering segments. The spikes are rather lance-shaped. The central flower is about twice as large as the lateral ones, reaching two-thirds the way up the segment. It has two stamens. The plant is a herbaceous annual.

***Salicornia pusilla*, Woods.**—The habitat of this plant is salt-marshes. The plant is very small (hence *pusilla*). The colour is grey-green, and the plant does not exceed 12 cm. in height. It is branched when full-grown, with curved, graceful branches, but it is sometimes less so, as in the type specimens. The vegetative segments are 6-10 mm. long. The terminal flowering spikes are short (5-10 mm.), with few flowers (2-4), which are globular. The lateral flowers are only one-third as large as the central one, which reaches two-thirds up the segment. The seed has spirally-coiled hairs, which differ from those of other annual species in not being crozier-shaped. The plant is 2-6 in. high, and is a herbaceous annual.

***Salicornia intermedia*, Woods.**—The habitat of this plant is salt-marshes. The plant, which may be regarded as the type, differs from *S. pusilla* only in having much longer and redder spikes. The plant is a herbaceous annual.

***Salicornia appressa*, Dum.**—This plant is dingy-red to crimson in colour. It is a prostrate plant, triangular in outline, fan-shaped, the branches ascending at the tip. The stems are loose, prostrate, then ascending, appressed to the mud (hence *appressa*). The main stem is 15 cm. or more long. The vegetative segments are 7-9 mm. long. The terminal flowering-spikes are short (10-22 mm.), tapering, and acute. The central flower is larger than the lateral ones, and reaches nearly to the top of the segment. The plant is a herbaceous annual. The height of the plant is 6-12 in.

***Salicornia gracillima*, Moss.**—This plant is green or red in colour. The habit is erect, rigid, more or less racemose. The stem is 12 cm. long. The branches are ascending, somewhat unequal, parallel. The non-flowering segments are short (5-8 mm.), the spikes are larger and longer than in *S. pusilla* (and the whole plant less fleshy), short, 6-12 mm., with 2-4 segments. There are 2 lateral flowers, usually smaller by half than the central flower, which extends half-way up the segment. The spikes contain cellules, which are spiral, spicular. The plant is a herbaceous annual.

***Salicornia disarticulata*, Moss.**—The habitat of this plant is the drier parts of salt marshes, where the plant grows among turf formed by *Glyceria*

BRITISH FLORA

maritima. Anatomically the plant is allied to the last, but in its loosely-attached segments and single-flowered, cyme-like inflorescences it is distinct from all other members of the sub-section Erectæ. It is recognized by the easily-disarticulating (hence *disarticulata*) segments and single flowers. The plant is yellowish-green, the tips of the branches reddish. The habit is erect, rigid, much-branched, the stem 15–16 cm. high. The segments are short, easily disarticulating at maturity (2–5 mm. long). The terminal spikes are short (2–6 mm. long), with 3–6 segments, the lateral spikes very short (1–3 mm.). The spikes contain cellules, which are spiral or spicular. The plant is a herbaceous annual.

Salicornia smithiana, Moss. (= *S. procumbens*, Auct. p.p.)—This plant is green in colour to red at maturity. The habit is prostrate, then slightly ascending, procumbent (hence *procumbens*). The stem is short, 15 cm., with few ascending branches. The non-flowering segments are short, 10 mm. The lower branches are longer than the upper, and are arranged crosswise. There are 2 lateral flowers, smaller by half than the central flower, extending half-way up the segment. There are no spiral or spicular cellules. The plant is a herbaceous annual.

Salicornia dolichostachya, Moss.—The habitat of this plant is shingle near high-water mark. The plant is green or yellowish-green. The habit is prostrate. The stem is limp, or more or less so, often much-branched, 5–8 cm. high. The segments are short or long. The spikes are very long (hence *dolichostachya*), 8–10 cm. long, with sometimes curved, short branches, especially at the base, with 15–30 segments. The lateral flowers are separated by the central one, and the species bridges over the perennial forms with the central flower separating the lateral ones, and the annual where they are not, but the central flower rests on the lateral ones. The species is recognized by the prostrate habit, much and irregularly branched. The plant flowers in mid-August, being the first to flower and fruit in the middle of September. The spikes also are very long, curved, branched. The plant is a herbaceous annual.

Salicornia perennis, Mill., var. *lignosa*, Moss.—This plant is stiffer, not, or little, rooting; the stem thicker, shorter, more woody below (hence *lignosa*). The plant is a prostrate dwarf shrub, with a single stem, unilateral. The branches are prostrate, and have no adventitious roots. The 3 flowers in the cyme are subequal, the central reaching two-thirds the way up the segment. The seeds have shorter hairs than in *S. perennis*. The plant is a herbaceous perennial.

Salicornia perennis, Mill. = *S. radicans*, Sm. = *S. fruticosa*, Auct.—The habitat of this plant is salt marshes and muddy seashores. The plant is often social, growing in matted clumps, and (when isolated) it is a metre across. It is a tufted, dwarf shrub, spreading by freely-rooting branches. The root-stock is woody, creeping, perennial, with herbaceous, round, barren, and flowering segments. The colour is browner than in *S. herbacea*.

The joints are deeply notched, hardly thickened. The spikes are blunt, thick, oblong, nearly stalkless. The central flower of the cyme is slightly larger than the lateral, which reach half-way up the segment. The seeds are nearly globular, with curved hairs, longer than in the foregoing species. The plant is 6–18 in. in height, flowering from August to October. It is a herbaceous perennial.

Seablite (*Suaeda fruticosa*, Forsk. = *obtusifolia*, Steud.).—The habitat of this plant is sandy, pebbly, or shingly coasts, where the plant is a factor in forming lateral banks and in protecting the coast. The plant has the shrub habit. The stem is erect, woody, with erect or ascending branches, hairless, and rather bluish-green. The leaves are crowded, fleshy, blunt, semi-cylindrical, dotted with white. The flowers are in the axils, solitary or 2–3, on short stalks. There are 3 styles. The seeds are vertical, black, smooth, shining. The plant is 1–3 ft. high, and flowers from July to September and October. The plant is a perennial shrub.

Annual Seablite (*Suaeda maritima*, Dum.).—The habitat of this plant is salt marshes and muddy seashores. The plant is erect or prostrate in habit. The stems are herbaceous, with many spreading branches, hairless, bluish-green, red in late autumn, branched from the base, the branches slender, straggly. The leaves are tapered below, more or less acute, semi-cylindrical. The flowers are rarely solitary, 3–5, shortly-stalked. There are only 2 styles. The seeds are horizontal, shining, finely furrowed, brown or black, beaked. The plant is 3–18 in. high, flowering between July and October, and is a herbaceous annual.

ORDER POLYGONACEÆ

Polygonum Roberti, Lois. = *P. Raitii*, Bab.—The habitat of this plant is sandy seashores. The habit is prostrate. The stem is long, straggling. The leaves are flat, elliptic to lance-shaped, bending towards the stem. The ocreæ, or tubular membranous stipules which surround the stem, are lance-shaped, acute, with a few distant, simple veins, and are at length torn. The anther-stalks are broader at the base. The nut is smooth, shining, and longer than the perianth. The plant is 1–3 ft. long, flowering between July and September, and is a herbaceous annual.

Sea Knot Grass (*Polygonum maritimum*, L.).—The habitat of this plant is shingle, seashores, sands of the coast. The habit is prostrate. The stem is woody below, stout, rigid, darker when dry, broader at the base, often buried. The leaves are elliptic to lance-shaped, the nerves netted below, thick, bluish-green below, leathery, the edges rolled back, convex above, spreading from the stem. The ocreæ are lance-shaped, with branched veins at length torn, silvery-white, conspicuous, membranous, large. The anther-stalks are broader below. The fruit is longer than the perianth. The nut is smooth, shining. The plant is 3–9 in. long, flowering in August and September, and is a herbaceous perennial.

Rumex rupestris, Le Gall.—The habitat of this

plant is sea-coasts. The habit is erect. The radical leaves are oblong, not so broad as in *R. conglomeratus*, strap-shaped, rounded, narrowed at both ends. The bracts are few, narrow. The panicle is tapering, with close whorls, all, but the 2-3 lowest, leafless. The enlarged fruiting segments are large, with nearly parallel sides, very large tubercles, and narrow, egg-shaped to oblong, blunt. The nut is egg-shaped, acute. The plant is 1-3 ft. high, flowering between June and September, and is a herbaceous perennial.

Curled Dock (*Rumex crispus*, L.).—The habitat of this plant is roadsides, field borders, waste ground, and it is native on seashores, glades in woods, natural broken ground. The habit is erect, more or less of the rosette or pyramidal type. The stem is branched, sometimes reddish. The leaves are oblong, lance-shaped, acute, wavy, crisped, the base blunt, rounded, or acute. The flowers are in a panicle, with erect branches, leafy below, in crowded whorls, leafless. The flower-stalks are jointed below, twice as long as the fruiting perianth-segments, or shorter. The perianth-segments are oblong, ovate, heart-shaped, blunt, more or less entire, the upper ones having a broad, smooth tubercle. They are green or red, netted, the inner are entire or scalloped, the upper one principally tubercled. The nut is elliptic, brown. The plant is 2-4 ft. high, flowering from June to August, and is a herbaceous perennial.

ORDER EUPHORBIACEÆ

Portland Spurge (*Euphorbia portlandica*, L.).—The habitat of this plant is sandy seashores. The habit is erect or ascending. The rootstock is cylindrical, woody, twisted. The plant is bluish-green, hairless. The stems are numerous, tufted, naked, scarred below, branched, leafy above. The leaves are inversely egg-shaped, lance-shaped, blunt, leathery, alternate, scattered, spreading, acute or blunt-pointed, entire. The bracts are triangular, or kidney-shaped to heart-shaped, broader than long, keeled, abrupt. The flower-heads are in umbels of 3-5 rays, forked, the involucral lobes 4, moon-shaped, long-horned. The capsules are rough at the angles or on the backs of the valves, faintly keeled. The seeds are whitish, with brown pits, and netted, opaque, the cuticle brown, the caruncle large. The plant is 6-18 in. high, flowering between April and September, and is a herbaceous perennial.

Sea Spurge (*Euphorbia Paralias*, L.).—The habitat of this plant is sandy seashores. The habit is erect or ascending. The plant is bushy, reddish or bluish-green. The rootstock is woody, tough. The barren stems are numerous, naked, with tubercles below. The leaves are pale-green, thick, leathery, overlapping, entire, elliptic, oblong, lance-shaped, the radical linear to inversely egg-shaped, oblong, the upper egg-shaped. The bracts are broadly heart-shaped, broader than long. The flowering stem is about 1 ft. high. The flower-heads are in umbels of 5-8 forked rays, short, stout. The involucres are stalkless or stalked,

with 3-4 short points. The capsules are leathery, wrinkled, lobed, with rough valves with a dorsal depression. The seeds are egg-shaped, dotted, whitish, with a very small caruncle. The plant is 9-18 in. in height, flowering between July and October, and is a herbaceous perennial.

Purple Sea Spurge (*Euphorbia Peplis*, L.).—The habitat of this plant is sandy shores, loose sand, shingle. The habit is prostrate, then ascending. The plant is bluish-green or purplish. The stems are numerous, forked, dividing into two forks repeatedly, spreading from the base. The leaves are opposite, half heart-shaped, with stipules (egg-shaped, divided into two nearly to the base) nearly entire, leathery, shortly stalked, blunt or notched, the base auricled on one side, blunt on the other, hairless. The flowerheads are solitary, the involucres in the axils or forks, shortly stalked, with oblong glands. The capsule is keeled, with smooth, hairless valves. The seeds are white, and have no caruncle. The plant is 2-10 in. in height, flowering between July and September, and is a herbaceous annual.

ORDER LILIACEÆ

Asparagus (*Asparagus officinalis*, L.).—The habitat of this plant is sea-cliffs. The habit is prostrate below. The rootstock is prostrate, the young shoots having triangular scales below. The stems are numerous, round in section, more or less erect, wavy, branched, spineless, the branches slender, the cladodes bristle-like, in groups, flexible. The flowers are drooping, in the axils, unisexual, yellowish-green, or dirty-white to yellow, with red veins, the males the larger. The stalk is as long as the flower, jointed in the middle. The berry is round, red, smooth, shining, 3-celled. The seeds are large, hard, black, smooth. The plant is 6-18 in. in height, flowering in June and July, and is a herbaceous perennial.

ORDER JUNCACEÆ

Baltic Rush (*Juncus balticus*, Willd.).—The habitat of this plant is sandy wet seashores, inland lakes (Aberdeen). The habit is rush-like. The rootstock is far-creeping, not tufted. The stems are rigid, with continuous pith, few, pale green, hardly finely-furrowed. The leaves are wanting, or small points at the top of the sheathing scales. The flowers are few, in an erect panicle, slightly branched. The perianth is dark brown, with a pale midrib, the segments acute, egg-shaped to lance-shaped, as long as the capsule. The anthers are longer than their stalks. There are 3 stamens. The capsule is 3-angled, egg-shaped, blunt-pointed, elliptic. It is distinguished from *J. glaucus* by the far-creeping rootstock, hardly finely-furrowed stem, and continuous pith. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Juncus Gerardi, Lois.—The habitat of this plant is sea-coasts, salt marshes. The plant has the rush habit. It has been regarded as a subspecies

or variety of *J. compressus*, a more inland species. There are one or more leaves on the stem, which is creeping, 3-angled above, distant. The leaves are linear, channelled. The flowers are in a terminal, compound, rather cymose panicle, longer than the bracts. The perianth-segments are as long as the capsule, and are oval to oblong, blunt. The floral bracts are shining, brown. The anthers are long. The style is as long as the ovary. The capsule is blunt-pointed, and oval to oblong. The plant is 6-15 in. high, flowering in July and August, and is a herbaceous perennial.

Great Sea Rush (*Juncus acutus*, L.).—The habitat of this plant is sandy seashores. The plant has the rush habit, forming circular tufts. The stems are erect, rigid, with a very sharp rigid point (hence *acutus*), round in section, hardly finely-furrowed, the flowerless ones numerous. The leaves are round in section, sharp-pointed, mostly reduced to long, shining sheaths. The flowers are in a dense, corymb-like panicle, very compound and close, large in fruit. The bracts are lance-shaped, awl-like, longer than the flowers. The perianth is brown, the 3 inner segments notched, with a broad membranous border, winged near the apex, the perianth-segments egg-shaped to lance-shaped, half as long as the broad, blunt, egg-shaped capsule, which is swollen, hardly 3-angled. The seeds are broadly egg-shaped. The plant is 2-4 ft. in height, flowering in July and August, and is a herbaceous perennial.

ORDER NAIADACEÆ

Sea Arrow Grass (*Triglochin maritimum*, L.).—The habitat of the plant is muddy salt marshes. The habit is tufted. The stems are thickened below. The leaves are radical, linear, fleshy, flattened at the tip. The scape is curved. The flowers are in a loose, simple, long raceme, and are greenish. The fruit is egg-shaped, oblong, not appressed to the scape. There are 6 stamens. The 6 carpels are grooved at the back. The plant is 10-12 in. high, flowering between May and September, and is a herbaceous perennial.

Tassel Pondweed (*Ruppia maritima*, L.=*R. spiralis*, Dum.).—The habitat of this species is salt water and brackish ditches, salt-marshes. The plant has the pondweed habit. The stem is slender, much-branched. The leaves are linear, narrow, opposite or alternate, the first leaf of each axillary shoot opposite a narrow, blunt, or notched cellular scale, arising from the base at the side next the axis. The flowers are in a spadix arising from the leaf-sheath. The leaf-sheaths are inflated. The flower-stalk is spirally coiled (as in *Vallisneria*), long, short and straight in flower, when fruiting 5-6 in. The anther-cells are $\frac{1}{2}$ times as long as broad. The nut is egg-shaped, green, beaked, obliquely erect, the stalk 1-2 in. The plant is floating. It flowers between July and September, and is a herbaceous perennial.

Ruppia rostellata, Koch.—The habitat of this plant is salt marshes. The plant has been regarded as merely a subspecies of the last. The

plant as a whole is very slender. The leaves are narrower, slender to linear. The sheaths are smooth, close, closely pressed to the stem. The fruiting-stalks are short, wavy, not spiral. The anther-cells are more or less round, rather square, as broad as long. The drupe is swollen below, obliquely ascending when young, the beak long (hence *rostellata*). The plant is floating. The flowering period is between June and August. The plant is a herbaceous perennial.

Zannichellia pedunculata, Reichb. = *Z. maritima*, Nolte.—The habitat of this plant is brackish water. The habit is that of a pondweed. The leaves are opposite, threadlike. The achenes are 2-5, stalked (hence *pedunculata*), with strong prickles on the back. The style is as long as the achenes. The stigma is large, scalloped. The anther-stalks are up to $\frac{1}{2}$ in. long. The anthers are 2-celled. The plant is floating. Flowers are to be found between May and August. The plant is a herbaceous annual.

Small Grasswrack (*Zostera nana*, Roth).—The habitat of this plant is muddy estuaries or salt water. The habit is ribbon-like or zosteroid (hence *Zostera*), like other grasswracks. The plant is small (hence *nana*). The leaves are slender, linear, 1-3-veined. The flower-stalks are slender, pale in colour, half as broad and as long as the spathe. The spathe is swollen above the stalk, oblong to lance-shaped, with a short blade. The spadix is few-flowered, short, with 2-5 clasping bands, the margin having membranous appendages bent inwards. The nuts are smooth, faintly furrowed, the seeds shining black when ripe. The plant is floating, flowering between April and August, and is a herbaceous perennial.

ORDER CYPERACEÆ

Heleocharis uniglumis, Sch.—The habitat of this species is wet sandy places, especially near the sea. The plant has the sedge habit more or less. The rootstock is far-creeping. The stem is clothed with transversely blunt sheaths at the base. The lower glumes are brown, egg-shaped, almost surrounding the spikelet, somewhat acute, the edges narrow, pale. The nut is pear-shaped, blunt, flattened at the border, the edge rounded. The surface is finely furrowed, dotted. The nut is crowned with the style, which is conical below, and is not as long as the bristles. The plant is 6-8 in. high, flowering in June and July, and is a herbaceous perennial.

Cluster-headed Club Rush (*Scirpus Holoschænus*, L.).—The habitat of this plant is sandy sea-coasts. The plant has the bulrush habit. The rootstock is creeping. The stems are tall, round in section, tufted, stout. The margins of the sheaths are united by netted fibres. The leaves are few, erect, channelled, awl-like, rigid, and occur on the upper sheaths, and are not so long as the stem, half round, with rough margins. The spikelets are very small, in dense, round clusters forming a cyme, the upper shortly stalked or stalkless, the branches half round and very stout. The lower

bract is erect, oblong, with a flat, open channel, the upper spreading or ascending. The glumes are inversely egg-shaped, notched, with a blunt point, fringed with hairs, variegated brown and white. The fruit is nearly round, blunt-pointed, wrinkled. The anthers have a long point, and are entire or toothed. There are 3 stigmas. The plant is 3-4 ft. in height, flowering from August to October, and is a herbaceous perennial.

Small Club Rush (*Scirpus parvulus*, R. and S. = *S. nanus*, Spreng.).—The habitat of this plant is sandy seashores, mud flats, and estuarine mud. The habit is as in the last. It is a small species (hence *parvulus* and *nanus*). The rootstock is creeping, long, with hair-like or slender stolons, with egg-shaped to awl-like tubers. The stems are numerous, grooved, transversely rounded, with one small sheath, very slender, closely pressed, leafless. The leaves are radical, slender, bristle-like, enlarged below, bent back, channelled. The spikelets are very small, few-flowered, pale, egg-shaped, oval. The glumes are egg-shaped, blunt, keeled, membranous, the lowest flowerless, not longer than the spikelet, the two outer longer. The bristles are 4-8, twice as long as the nut, barbed, the hairs bent downwards. The nut is pale, inversely egg-shaped to oblong, 3-angled, smooth, blunt-pointed. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous annual.

***Scirpus Tabernæmontani*, Gmel. = *S. glaucus*, Sm.**—The habitat of this plant is brackish ditches, usually near the sea, rivers, and ponds. The habit is as in the last. The plant is creeping below. The stems are round in section, bluish-green (hence *glaucus*), with 1 or 2 long sheaths below. The plant has 2 floating leaves, as in *S. lacustris*. The spikelets are in a terminal, compound panicle, smaller than the common type. The lower bract is short. The glumes are rough, notched, fringed, the anthers are not bearded, but the tips are smooth. There are 2 stigmas. The nut is flattened at the border, round, oblong, smooth. The plant is 1-3 ft. high, flowering between July and September, and is a herbaceous perennial.

Triangular Bulrush (*Scirpus triquetus*, L.).—The habitat of this plant is muddy tidal rivers. The plant has the bulrush habit. The stems are acutely 3-sided, with concave faces. There are 1-2 long sheaths below, the upper ending in a short, broad, 3-sided leaf, or usually leafless. The flowers are in a small, lateral, cyme-like panicle, with short, stout branches. The lower bract is long and rigid, like a continuation of the stem. The spikelets are small, stalked and stalkless, solitary or few, ovoid, long. The glumes are inversely ovate, notched, smooth, fringed with rounded, blunt lobes. The nut is 3-angled, roundish to inversely ovate, plano-convex, shining, smooth. The anthers have a short, beardless point. There are 2 stigmas. The plant is 1-3 ft. high, flowering in July and August up to October, and is a herbaceous perennial.

Brown Club Rush (*Scirpus rufus*, Schrad.).—This species is found in wet pastures or marshes, salt marshes, especially near the sea, on the north-

ern and western coasts. The stems are slender, round, tufted. The rootstock is creeping. The leaves are short, channelled, smooth, half-round in section. The spikelets contain 2-4 flowers, and are chestnut-brown, few and short, not longer than the bract. The glumes are dark-brown and polished, the outer glume smooth, as long as the spikelet. There are 1-6 slender, deciduous, short, rough bristles, with spreading or ascending teeth. The fruit is brown, ovate, opaque, with a long beak. The plant is 3-12 in. high, flowering in July, and is a herbaceous perennial.

Large-headed Sand Sedge (*Carex incurva*, Lightf.).—The habitat of this plant is sandy shores of the north, damp sea sand. The habit is grass-like, drooping. The stem is smooth, stout, bent down, nearly round, with spreading sobs. The leaves are channelled, as long as the stem, with the margins inrolled. The spikelets form a head, the male above. The glumes are blunt, egg-shaped, not so long as the perigynia, which are egg-shaped, swollen, spreading; the smooth beak split. The nut is inversely egg-shaped. The plant is 2-4 in. in height, and flowers in June and July, being a herbaceous perennial.

***Carex divisa*, Huds.**—The habitat of this sedge is marshes near the sea, brackish marshes, especially on the southern and eastern coasts. The habit is grass-like. The stem is slender, rough at the top, the long, narrow leaves are wavy, and have the margin inrolled, an adaptation to dry conditions. The spikelets form a crowded head, and there is a bristle-like bract below, brown, with a membranous border. The fruit is egg-shaped, and as long as the egg-shaped acute membranous glumes, with a blunt point, plano-convex, veined. The beak is divided into two nearly to the base, and has the edges roughly and coarsely toothed. The nut is brown, rounded. The plant is 1-3 ft. in height, and flowers in June and July. It is a herbaceous perennial.

***Carex salina*, Wahl. = var. b. *kattegensis*, Fr.**—The habitat of this species is the margins of tidal rivers. The plant has the sedge habit. The stem is 3-angled, tall. The leaves are narrow, yellow-green, with rough keel and margin. The sheaths are not webbed. The spikes are erect, the lower drooping. The male spikelets are 2-3, the fertile 3-4, on short stalks, sometimes male above. The glumes are brownish, egg-shaped, blunt or with a short point, the lower with an excurrent, rough midrib. The bracts are as long as the spikes, leaf-like. There are 2-3 stigmas. The fruit is egg-shaped, flattened, with many veins and a short beak. The nut is inversely egg-shaped, narrow above and below. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Distant-spiked Sedge (*Carex distans*, L.).—The habitat of this species is marshes, chiefly maritime, and wet meadows. The plant has the sedge habit. The rootstock is tufted and creeping. The stems are 3-angled, smooth or roughish above, leafy below the middle. The leaves are broad, bluish-green, often bent back, flat. The sheaths are long,

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The bracts are leafy, sheathed. The fertile spikelets are distant (hence *distans*), erect, cylindric to oblong, the upper stalk included; the lower bract is not so long as the stem, the lower stalked. The male spikelets are long-stalked, slender, club-shaped to cylindrical. The glumes are egg-shaped, blunt, short-pointed, broad, rather acute, brown with a green midrib, the margins and tip white. The fruit is nearly erect, stalkless, opaque, green, egg-shaped, ascending, 3-angled, equally faintly ribbed, dotted, smooth, longer than the glumes, the beak broad, rough, slender, flat, short, and straight, blunt and pointed, the mouth membranous. The nut is broad, inversely egg-shaped, 3-sided, brown. The plant is 10-18 in. high, flowering in June, and is a herbaceous perennial.

Spotted Sedge (*Carex punctata*, Gaud.).—The habitat of this plant is marshy places near the sea, wet places in the south of England and Ireland. The plant has the sedge habit. The plant is slender. The stems are smooth and slender. The leaves are short, flat, somewhat bent back. The bracts are leafy, with sheaths. The fertile spikelets are erect, cylindrical, with somewhat projecting rough stalks, especially the lowest. The lowest are often distant, the upper close. The glumes are blunt or shortly crowned or pointed, the point rough, pale-red, with a broad green dorsal band, egg-shaped. The fruit is swollen, pale, shining, membranous, scarcely 3-angled, spreading, egg-shaped, transparently dotted (hence *punctata*), not ribbed, longer than the glumes, the beak short, linear, with 2 points. The nut is egg-shaped to rhomboidal, narrowed both ends, triangular, rough. The plant is 1-1½ ft. high, flowering in May, June, July, and is a herbaceous perennial.

Long-bracted Sedge (*Carex extensa*, Good.).—The habitat of this plant is marshes, chiefly near the sea, brackish or salt. The habit is sedge-like. The rootstock is tufted. The plant is slender. The stems are 3-angled, smooth, slender, curved, longer than the leaves as a rule. The leaves are bristle-like, rolled up lengthwise, usually below the middle, rigid, wavy, the margin inrolled, an adaptation to drought (in this case physiological). The bracts are leafy, narrow, very long, at length horizontal. The sheaths are short. The spikelets are 3-4, shortly stalked, the male are solitary, brown, slender. The fertile spikelets are short, distant, oblong, or 2 upper or all close, or the lower rather distant. The glumes are blunt-pointed, small, brown, with a green midrib, the edges of the same colour. The fruit is egg-shaped, 3-sided, inflated, ribbed, leathery, opaque, spreading, dotted, narrowed above to a straight, short, smooth beak, divided into two nearly to the base. The nut is oblong to elliptic, olive-brown. The plant is 4-18 in. high, flowering in June and July, and is a herbaceous perennial.

ORDER GRAMINACEÆ

***Spartina stricta*, Roth.**—The habitat of this plant is muddy salt marshes, creeks, mudflats, in

south and east of England. The plant has the grass habit. It forms small tufts $\frac{1}{2}$ to $1\frac{1}{2}$ ft. high. The rootstock is long, branched, creeping, the rhizomes and stolons wiry. The stems are erect, rigid, and strict (hence *stricta*), stout, polished, culms with a succession of tight, firm, short sheaths, which (with the exception of the upper) soon throw off the blades. The leaves are jointed to the sheaths, broad, strict, erect, not so long as the spike, rolled lengthwise, smooth, bluish-green above, narrowed to the base, breaking from the sheath. The ligule is short, silky. The panicle is strict, of 2-3 spikelets, the point of the rachis of the spike awl-like, and scarcely projecting, angled, smooth, the point as long as or longer than the upper spikelet. The spikes are usually close, rigid, overtopping the leaves. The spikelets are yellowish-green, erect, $5\frac{1}{2}$ -7 in. long when flowering. The empty glumes are acute, the upper with 2 teeth and a stiff awn, silky, with a rough keel. The second glume is 3-nerved, the lateral nerves with membranous tips. The outer glume is hairy. The plant is 1-2 ft. high, flowering between July and September, and is a herbaceous perennial.

***Spartina alterniflora*, Lois.**—This species occurs on mud flats at Southampton Water, South Hants. The habit is the grass habit. The leaves are broadest at the base and continuous with the sheaths, and are equal to or longer than the spikes (6-8), the tip of the rachis wavy, exceeding the spikelets. The spikelets are numerous and loosely pressed together. The outer glume is hairless. The plant is 2-3 ft. high, flowering between July and September, and is a herbaceous perennial. Dr. O. Stapf has recently described it as follows: "Forming large clumps or beds, 2-3 ft. high, rhizomes and stolons soft, culms with a succession of up to 8 or 9 soft and very smooth sheaths, not throwing off the blades, which gradually decay, spikes usually 5-7, suberect, slender, and often slightly flexuous, overtopped by the long-drawn-out blades, spikelets glabrous to the naked eye, 6-7½ in. long, second glume delicately 5-6-nerved to the very tip".

Rice Grass or Sea Rice (*Spartina Townshendii*, Groves = *S. alterniflora* × *stricta*).—The habitat of this plant is mud flats, and it is rapidly spreading on the south coast, where it covers an area of 6000-8000 ac. It was first discovered by Messrs. H. and J. Groves in 1879 at Hythe, Southampton Water, but was there in 1870. The plant forms large clumps or beds 2-4 ft. high, with soft rhizomes and stolons. The culms have a succession of up to 10 or 12 somewhat soft sheaths, increasing in length upwards, the lowest throwing off the blades. The leaves are broadest at the base, shorter than in the other species, jointed to the sheaths, not so long as the spike. The spikes, 3-5 as a rule, are more or less erect, rigid, extending above the leaves. The spikelets are 4-9, about 8½ lines long, rather spreading, softly downy, the rachis produced beyond the spikelets, wavy. The second glume is 3-6-nerved, with one or two stouter lateral nerves, the keel ending abruptly below the short, membranous tip. The outer glume is slightly

downy. The plant is $1\frac{1}{2}$ -4 ft. high, and flowers from July to September, being a herbaceous perennial.

Alopecurus bulbosus, Gouan.—The habitat of this plant is salt marshes in the south. The plant has the grass habit. The stem is smooth, prostrate or ascending or erect, tuberous (hence *bulbosus*), forming a circular tuft, geniculate or bent, the lowermost nodes forming egg-shaped, fleshy tubers. The plant is not bluish-green. The upper sheath is enlarged. The ligule is oblong. The panicle is slender, cylindrical, rather acute, long-pointed. The stalks are 1-2-flowered. The empty glumes are acute, free, the keel fringed with short hairs, the flowering glume longer than the palea, the awn projecting half-way beyond the latter from its base. The palea is blunt, notched, with 2 small teeth in the middle. The plant is in flower in May and June, and is a herbaceous perennial.

Milium scabrum, Rich. = *M. verna*, Bieb.—The habitat of this plant is grassy cliffs. The plant has the grass habit. The stem is rough (hence *scabrum*), as indeed is the whole plant. The leaves are linear to lance-shaped, short. The panicle is small, close. The palea is blunt. The bracts are few, short, wavy. The glumes are 3-veined. The plant is 1-4 in. in height, flowering in April and May, and is a herbaceous annual.

Sandhill Cat's Tail (*Phleum arenarium*, L.)—The habitat of this plant is sandy dunes, sands near the coast, sandy commons inland, being a sand-loving plant (hence *arenarium*). The plant has the grass habit. The stems are leafy, crowded, variable in height. The leaves are flat, broad, with enlarged upper leaf-sheaths, which are smooth. The ligule is long. The panicle is egg-shaped, cylindrical to oblong, narrow below, blunt, bluish-green, a common character amongst xerophytes. The spikelets are close. The empty glumes are lance-shaped, long-pointed, scarcely awned, the keel fringed with hairs above. The flowering glume is very small, hairy. The lower palea is notched, one-third as long as the glumes. The plant is 4-8 in. high, flowering in June and July, and is a herbaceous annual.

Mibora verna, Beauv.—The habitat of this plant is dry, sandy places and wet sands, especially near the sea. The habit is erect. The stems are numerous, slender, tufted. The leaves are short, erect, bristle-like, rough, blunt, with inrolled margins, adapted to drought. The swollen sheaths are white. The ligule is short. The spikes are slender. The spikelets are stalkless, 5-10. The glume is longer than the 2-nerved palea, hairy, blunt, and torn. The empty glumes are longer than the flowering glumes, and there is no awn. There are 3 stamens, with short anthers, and the styles are long, the stigmas hairy. The fruit is flattened at the border, enclosed in the glume and palea. It is only 1-3 in. high. The flowers open in April and May. It is a herbaceous annual.

Beard Grass (*Polypogon monspeliensis*, Des.)—The habitat of this plant is damp pastures, sandy places near the coast, salt marshes. The habit is erect, and it is a most handsome grass. The stems

are stout, arising from a fibrous root, smooth. The large, broad leaves are flat and roughish, with smooth sheaths, and the ligule is blunt and large. The panicle is dense, oblong, egg-shaped, lobed, blunt, pale yellowish-green, soft, and silky. The glumes are rough, notched, blunt, hairy, linear, the awn longer by three times, and straight. The flowering glume is silvery, not as long as the empty glume. The stamens are 1-3, with small anthers. The short styles are free, the stigmas feathery. The fruit is enveloped in the glume and palea. The plant is 9-18 in. in height. It flowers late from July to August, and is a herbaceous annual.

Perennial Beard Grass (*Polypogon littoralis*, Sm.).—This species is found in sandy places near the coast and in muddy salt marshes. The plant has the grass habit. It has been considered a hybrid between *P. monspeliensis* and *Agrostis alba* by Douval-Jouve. The root is creeping. The stem is erect or prostrate, slender below. The panicle is close, lobed, purplish. The glumes are linear to lance-shaped, faintly notched, acute, as long as the awns. The empty glumes are smoother than in the next, more acute, the awns not so long, the keel rough. The flowering glume is one-third shorter, awned. The awns project. The plant is 4-18 in. high, flowering in July and August, and is a herbaceous perennial.

Nit Grass (*Gastridium lendigerum*, Gaud. = *G. australis*, Beauv.).—The habitat of this grass is damp places, especially near the sea, maritime sandy marshes, and cultivated ground (inland). The plant has the grass habit. The stems are tufted, erect or ascending, leafy, slender. The leaves are rough at the edge, short, flat. The sheaths are smooth. The ligule is oblong. The panicle is large, dense, spike-like, spindle-shaped to cylindrical, pale-green, and glistening. The branches are rough. The glumes are lance-shaped, with a long narrow point, swollen (hence *Gastridium*), polished, shining below. The ultimate flower-stalks are swollen above. The empty glumes are erect, long-pointed, the keel faintly rough. The flowering glume is white, shining, with 4 teeth. The awn projects near the top, and is very slender, longer than the glumes. The plant is 12-18 in. high, flowering between June and October. The plant is a herbaceous perennial.

Baltic Marram Grass (*Ammophila baltica*, Link).—The habitat of this grass is sandy coasts on the east coast of England. The plant has the grass habit, like the commoner form. From the latter it is distinguished by the looser, less cylindrical, long, interrupted panicle, the more lance-shaped, long-pointed glumes, more acute, like the palea. The nerves in the flowering glumes are less distinct. The glumes are twice as long as the hairs. It has been supposed to be a hybrid between the common form and *Calamagrostis Epigeios*. The panicle is not so silvery-white. The plant is 2-4 ft. high, flowering between June and September, and is a herbaceous perennial.

Hare's Tail Grass (*Lagurus ovatus*, L.).—The habitat of this plant is sandy shores. The plant

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has the grass habit. The stems are numerous, erect, or prostrate below, stout, downy, leafy at the base. The leaves are short, broad, flat, lance-shaped, downy. The sheaths are downy and inflated. The ligule is short. The spikes are white, blunt, egg-shaped (hence *ovalus*), soft. The empty glumes are very slender. The awn is twice as long as the nearly hairless flowering glume. The plant is 3-12 in. in height, flowering in June and July, and is a herbaceous annual.

Grey Hair Grass (*Weingaertneria [Coryne-phorus] canescens*, Bernh.).—The habitat of this grass is sea-coasts. At Salthouse, Norfolk, it forms a short turf on the landward side of the shingle banks. The plant has the grass habit, forming rigid, hard tufts. The stems are slender, bent below, hairless above, with short branches. The leaves are numerous, short, rigid, bristle-like, bluish-green, reddish below, the margins rolled inwards. The upper sheaths are long, rough. The ligule is lance-shaped. The panicle is narrow to oblong, silvery (hence *canescens*) or purplish, close, spreading in flower. The branches are short and thickened at the forks. The spikelets are narrow, pale-silver or purple, variegated. The empty glumes are narrow, long-pointed, with membranous tips. The flowering glumes are not so long, softly hairy below, the keel channelled. The awn is short or projecting, the lower part dark-yellow or purple below, straight and cylindrical, twisted, bearded in the middle where it is bent, the upper part club-shaped, white, with a purple tinge. The anthers are purple. The plant is 4-8 in. high, flowering in July, and is a herbaceous annual.

Dog's Tooth Grass (*Capriola Dactylon*, Druce = *Cynodon Dactylon*, Pers.).—The habitat of this plant is sandy shores in south-western England. The plant has the grass habit, and to some extent mimics *Panicum*. The plant has a creeping root. The stem is stout, woody below, the barren shoots with spreading leaves, prostrate, with leafy, rather erect, short, smooth, flowering branches, the sheaths strongly furrowed. The leaves are awl-like, bluish-green, stiff, short, the margin inrolled, the tips blunt, with prominent nerves, downy below, in two rows on the barren shoots. The sheaths are pale, the mouth hairy. The spikes are slender, many-flowered, purple, and radiate in a cluster from a common centre, being 3-6, and finger-like. The rachis is convex, with a groove above. The spikelets are overlapping. The empty glumes are egg-shaped, acute. The keel is rough, fringed with hairs. The palea is smooth, fringed with hairs. The plant is 4-8 in. high, flowering in July and August, and is a herbaceous perennial.

Bulbous Meadow Grass (*Poa bulbosa*, L.).—The habitat of this plant is sandy maritime places in southern and eastern England. The plant has the grass habit. The plant is hairless, and rather rigid. The lower nodes are tuberous (hence *bulbosa*), the tubers egg-shaped, with loose sheaths, the base of the stem tuberous and the offsets bulbous. The root is fibrous. The stem is smooth, round in section, soon withering, the tubers lying

loose till autumn. The leaves are narrow, curved, keeled, with a white toothed border. The upper leaves are very short. The lower sheaths are short, the upper long and flattened at the border and below the middle of the stem, much longer than the leaf. The ligules are long and acute. The panicle is egg-shaped, flattened, erect, close, the branches 2-lobed, rough. The spikelets are green and purplish-brown, with 3-4 webbed florets, egg-shaped. The empty glumes are egg-shaped, acute, the keel rough. The flowering glumes are broad, acute, 3-6, downy at the border and on the acute keel, the nerves being indistinct. The plant is 6-8 in. high, flowering in April and May, and is a herbaceous perennial.

Glyceria foucaudii, Hack.—This species has been regarded as a variety of *G. maritima*. It differs in the stem, which has a large central cavity. The leaves are flat. The spikelets and flowers are larger than in the type.

Glyceria festuciformis, Heyn.—The habitat of this species is coasts. The stem is firm, erect, slightly arching at the top. The leaves are broader than in *G. maritima*, of which it has been regarded as a variety, but are not flat. The spikelets and flowers are larger than in the latter. The plant is 2-3 ft. in height.

Slender Manna Grass (*Glyceria distans*, Wahl.).—The habitat of this species is sandy (chiefly maritime) places, seashores, and waste sandy places. The plant has the grass habit. There are rarely rooting stolons. The stem is prostrate below. The root is tufted. The stem is usually tall and slender. The leaves are flat, broad, with 8-10 prominent ridges above. The ligule is short and blunt. The panicle is long, spreading, branched, the branches 4-5-lobed, long, slender, bent down at length, or horizontal, the lowest in fours or fives. The spikelets are 3-5-flowered, linear, the rachis half-round in section, flat one side. The lower palea is blunt, the midrib not reaching the tip, the edges not rolled inwards. The plant is 9-24 in. high, flowering between July and October, and is a herbaceous perennial.

Borrer's Manna Grass (*Glyceria Borreri*, Bab.).—The habitat of this species is salt marshes on the eastern and southern coasts. The plant has the grass habit. The plant is bluish-green in colour. There are no stolons. The stems are densely tufted, stout. The leaves are flat, short. The sheaths are very long. The ligule is blunt, short. The panicle is short, contracted, strict, not or slightly lengthened in fruit, with a stout rachis, 2-3-branched, the branches solitary, at length erect to spreading, the lowest usually in fours, stiffly hairy. The spikelets are rather small, linear, 4-7-flowered, the rachis round in section. There are 3-5 flowering glumes. The lower palea has a rigid, hard point, formed by the tip of the dorsal vein, the edges not being rolled inwards. The plant is 6-18 in. high, flowering between June and September. It is a herbaceous perennial.

Procumbent Manna Grass (*Glyceria procumbens*, Dum.).—The habitat of this plant is muddy seashores and salt marshes. The plant has the

grass habit. The root is fibrous. The stems are prostrate, erect in water, rigid, short, stout, spreading. The leaves are flat, short, bluish-green, more or less acute, hairless. The sheaths are large, grooved, inflated. The ligules are short. The panicle is rigid, green, inversely lance-shaped, egg-shaped, compact, in two rows, the branches short and rigid, solitary or 2-3, stout, erect to spreading, smooth, more or less in two rows. The spikelets are but shortly stalked, crowded, linear-lance-shaped, 4-10-flowered. The rachis is angular. The flowering glumes are 3-5, blunt, with a short point. The florets are large. The plant is 3-6 in. high, flowering in June and July, and is a herbaceous annual.

Secund Grass (*Festuca uniglumis*, Sol. = *F. membranacea*, L., non Kit.).—The habitat of this plant is sandy sea-coasts. The plant has the grass habit. The root is fibrous. The stem is erect, leafy throughout almost, bent below, slender, hairless. The leaves are bristle-like, short. The upper sheaths are large, inflated, the uppermost distant from the spike. The ligule is short and auricled. The panicle is erect, simple, one-sided, close, short, oblong, pale-green, shining. The rachis is smooth. The spikelets have awl-like awns, and are all turned one side, being in fruit wedge-shaped, and the flowers are keeled and flattened. The flower-stalks are short and stout. The rachilla is smooth. The lower empty glume is very small, with awl-like tips, the upper 3-nerved, membranous (hence *membranacea*). The flowering glumes are distant, very narrow, with prominent nerves, rounded below, flattened above, narrowed to the awl-like awn. The flowers are triandrous. The ovary is hairless. The glumes are very unequal, often only one (hence *uniglumis*). The plant is 6-12 in. high, flowering in June and July, and is a herbaceous annual.

Desmazeria (*Festuca*) *loliacea*, Huds. = *F. rottboelliioides*, Kunth.—The habitat of this plant is sandy shores. The plant has the grass habit. The root is fibrous. The stems are spreading, erect, or ascending, leafy, stout, slightly curved. The leaves are flat, rolled together lengthwise, small. The sheaths are smooth. The ligule is oblong. The spikes are strict, half-round, wavy, with smooth edges, a raceme-like panicle, simple, with alternate, solitary, linear-oblong spikelets in two rows, stalkless, erect, green. The flowering glumes are 8-12, blunt, with a short point, with faint nerves, bluntly keeled, smooth, the lateral nerves strongest. The upper glume reaches to the base of the fourth floret. The plant is 4-8 in. high, and flowers between May and July, being a herbaceous annual.

Festuca ambigua, Le Gall.—The habitat of this plant is sandy places, walls, and sandy shores. The plant has the grass habit. This plant has been regarded as a variety of *F. ciliata* = *F. barbata* and as a subspecies of *F. Myrus*. The plant is slender, with the leaves with inrolled margins. The panicle is short and close, long, narrow, erect.

The glumes are not hairy. The upper sheath nearly reaches the panicle. The upper empty glume is 3-6 times as long as the flowers. The flowers are round in section, rough. The plant is 4-8 in. high, flowering from May to July, and is a herbaceous annual.

Jersey Brome Grass (*Bromus maximus*, Desf. = *B. rigens*, L.).—The habitat of this plant is sandy and dry places on the shore. The plant has the grass habit. The root is fibrous. The stems are round in section, downy. The leaves are broad, bright-green, flat, hairy. The sheaths are round, the hairs spreading or turned back. The ligule is short and blunt. The panicle is loose, erect, nodding at length, slightly branched. The branches are short, closely pressed, slightly divided after flowering, lengthening. The rachis is downy. The spikelets are downy, long, lance-shaped, stalked in fruit, long-awned, pale-green or purple. The rachilla is hairless. The empty glumes are membranous, narrowed, awned. The upper glumes are twice as long, nearly equaling the lowest flowering glume. The flowering glumes are thin, narrow, rough, narrowed to the awn, which is also rough. The nerves are indistinct. There are 2-3 stamens. The plant is 9-24 in. high, flowering in June, July, and August, and is a herbaceous annual.

Sharp Couch Grass (*Agropyron pungens*, Roem. et Schult.).—The habitat of this plant is seashores and tidal rivers, maritime shores. The plant has the grass habit. The stems are erect, solid above, densely tufted. The plant is soboliferous. The leaves are rough, firm, pungent, with the margin rolled inwards, an adaptation to drought, ribbed, the ribs rough in one line. The spike is close, 5-12-flowered. The spikelets are rough on the keel. The lower palea is acute. The glumes are keeled, acute, with 7-9 ribs reaching the tip, the rachis having broad internodes, and nearly or quite smooth, not brittle. The lower palea is awned. The plant is 1-2 ft. high, flowering from June to August, and is a herbaceous perennial.

Hardgrass (*Lepturus filiformis*, Trin.).—The habitat of this plant is gravelly and waste places near the sea. The plant has the grass habit. The plant is not hairy. The root is fibrous. The stems are bent, curved below, ascending, stout or slender (hence *filiformis*). The leaves are leathery, short, rather rough, with inrolled margins. The sheaths are flattened, smooth, the upper inflated. The ligule is very short, auricled. The spike is slender (hence *filiformis*), awl-like, erect or prostrate, straight, short. The rachis is ridged, grooved, concave. The green spikelets are spreading, or closely pressed to the rachis. The empty glumes are oblique, linear to oblong, acute. There is one green nerve in the flowering glume. The keels of the palea are not hairy. The two glumes are united below, and equal or exceed the flowers. The plant is 4-10 in. high, and is in flower between July and September. It is a herbaceous annual.

FLOWERS OF THE WOODS AND COPSES

[N.B.—The woodland plants preceded the vegetation of the open country, e.g. meadows and cornfields, but they may be found lingering where woods have been cut down, in shaded places, or in the open. Scrub, also, is an intermediate stage, and therefore the plants enumerated here may be found in some cases not in actual woodlands to-day, in meadows, or in hedges, &c.]

ORDER RANUNCULACEÆ

Meadow Rue (*Thalictrum majus*, Crantz).—The habitat of this plant is copses, wet rocky places, damp bushy and stony places. The habit is erect. The stem is branched, tall, with numerous large leaves below, solid, finely furrowed. The leaves are twice or thrice pinnate, with lobes each side of a common stalk, 3-5-lobed, and the stipules have the auricles bent back. The flowers are drooping, in a panicle, with spreading branches. The flower-stalks have spreading branches. The carpels are elliptical. The anthers have a point at the tip. The plant is 2-4 ft. high, and flowers in July and August. It is a herbaceous perennial.

Yellow Wood Anemone (*Anemone ranunculoides*, L.).—The habitat of this plant is plantations, and the plant is rare. The habit is that of the Wood Anemone, with a horizontal rootstock. The leaves are 5-lobed. The scape bears an involucre of deeply-cut, ternate bracts. The flowers are yellow, drooping, solitary or two together. The 5-7 sepals are elliptic, externally downy. The carpels are downy, pointed, not feathery. The plant is 4-6 in. in height. It flowers in April and May, and is a herbaceous perennial.

Blue Mountain Anemone (*Anemone apennina*, L.).—This species is an alien introduced from Italy, and scarcely naturalized, being found in plantations. The habit is similar to the last, the rounded rootstock tuberous. The leaves are threternate, stalked, and deeply cut. The involucre of bracts is similar to the leaves. The flowers are blue, solitary, erect. There are many (10-14) lance-shaped sepals. The carpels are not feathery, but pointed. The Blue Mountain Anemone is 4-6 in. in height. It flowers in April. The plant is a herbaceous perennial.

Stinking Hellebore (*Helleborus foetidus*, L.).—The habitat of this plant is woods, plantations, and thickets in S. and E. England. The habit is erect. The stems are leafless, smooth below and downy above, below scarred. The leaves are stalked, with lobes arising from a centre, and

the lateral ones also lobed, bent back, the lower stalked, the upper leaves having large sheaths and becoming bracts above. The flowers are numerous, green, drooping, the sepals green, blunt, with purple margin. The petals are not as long as the stamens. The follicles are wrinkled and glandular, with an awl-like style. The plant is 1-2 ft. high, and flowers from March to May. It is an evergreen perennial.

Winter Aconite (*Eranthis hyemalis*, Salisb.).—In the south of England this plant is naturalized in thickets, and occurs in ornamental plantations, parks, and old gardens. The plant has an erect habit, with a tuberous rhizome or underground stem. The radical leaves are rounded, on long stalks, the lobes 5-7, blunt, deeply cut, the lobes oblong, linear, arising from a common centre or palmate. The stem-leaves are in whorls, and form an involucre of stalkless bracts below the flowers, which are single and yellow, cup-shaped. There are 5-8 oblong sepals, which are petaloid, overlapping and falling. The small petals are clawed, and 2-lipped. There are numerous stamens, longer than the petals. The carpels are stalked, 5-6, the follicles being separate, with numerous egg-shaped seeds. The plant is 4-6 in. in height, flowering from January to April, and is a herbaceous perennial.

Monkshood (*Aconitum Napellus*, L.).—The habitat of this plant is shady places, near streams, banks of rivers and brooks. The habit is tufted. The black root of 2 knobs is spindle-shaped. The stem is erect, simple, slightly downy. The leaves are much divided, with deeply-cut segments arising from a common centre, 3-5-lobed, the upper ones stalkless. The leaf-stalk is enlarged below. The flowers are purple, irregular, in a raceme. The petals small, 2-5, the two upper swollen above, forming spurs which are bent down, horizontal, on long curved stalks, the lip large. The sepals are large, coloured, the upper enclosing the rest and curved back, helmet-shaped. The erect flower-stalks are downy. The filaments are hairy, with blunt-pointed wings, enlarged below. The stamens are numerous, the anthers greenish-black. The carpels are spreading, the

follicles (3-5) cylindrical, beaked, and many-seeded, the seeds black, triangular, wrinkled. The plant is 1-2 ft. in height, flowering in June and July, and is a herbaceous perennial.

Baneberry (*Actaea spicata*, L.).—The habitat of this species is woods, mountainous pastures, mountainous limestone tracts, calcareous woods, copses on limestone. The habit is erect. The stem is simple or branched. The radical leaves are on long stalks, 2-3 ternate, with lobes each side of a common stalk, the leaflets smooth, egg-shaped, 3-lobed, with a long point, coarsely toothed. The flowers are white, in a long simple raceme, the sepals petaloid, blunt, falling, the petals small, as long as the stamens. The flower-stalks are downy. The anther-stalks are swollen above. The berries are black, egg-shaped, many-seeded. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

ORDER BERBERIDACEÆ

Barren Wort (*Epimedium alpinum*, L.).—This plant is found in plantations, rock-works, old castle gardens, and subalpine woods in which it has been planted. The habit is prostrate or erect. The stem produces rhizomes bearing stems and leaves. The stem-leaves are twice-ternate, the leaflets egg-shaped, heart-shaped, toothed. The flowers are red, in a short panicle, less than the leaves, as if growing from the leaf-stalk. The 4 sepals fall, and there are 4 petals. The 4 nectaries are cup-shaped. There are 4 stamens. The capsule is a pod, with numerous seeds. The plant is 6-18 in. in height, flowering in June and July, and is a herbaceous perennial.

ORDER FUMARIACEÆ

White Climbing Fumitory (*Corydalis claviculata*, D.C.).—The habitat of this plant is thickets, heaths, copses, banks, thatched roofs, stony places, trees, or damp and loose soil in shady places. It has a climbing habit, intermediate between a leaf-climber and a tendril-climber, the leaves ending in branched tendrils. The stem is slender and brittle. The leaves are bluish-green, with lobes each side of a common stalk, ternate, the leaflets entire, elliptic, 3-5-lobed, with small egg-shaped segments. The leaf-stalk bears tendrils. The bracts are oblong, with a blunt point, longer than the flower-stalks. The small flowers are white or cream-coloured, with a very short spur. The pods are linear, oblong, the seeds small, granulate, shining. The plant is a climber, flowering between June and September, and is either annual, biennial, or perennial.

ORDER CRUCIFERÆ

Mountain Bitter Cress (*Cardamine impatiens*, L.).—The habitat of this plant is woods, shady copses, talus slopes, rocks, hilly districts, preferably on limestone. The habit is as in the last, but the stem smooth, more leafy, and branched.

The rootstock is spindle-shaped. The leaves have lobes each side of a common stalk, the leaflets stalked, lance-shaped, with narrow, sharp divisions, the lower egg-shaped, 3-lobed, the upper oblong, lance-shaped. The leaf-stalks have bent-back, arrow-shaped lobes at the base, fringed with hairs. The flowers are white (½ in.), in a panicle, the petals erect, linear, egg-shaped. The anthers are yellow, and the style is slender. The pods are shortly stalked and erect, with many seeds. The plant is 9-24 in. in height, flowering between June and September, and is annual or biennial, and herbaceous.

Coral Root (*Dentaria bulbifera*, L.).—The habitat of this plant is woods, copses, and shady places. The thick rootstock is white, hence the English name, scaly, and creeping, the knobs tooth-like. The stem is erect, simple, leafless below. The lower leaves have lobes each side of a common stalk, the leaflets lance-shaped; the upper simple, entire, alternate, with bulbils in the axils (hence the Latin specific name), the margin sometimes toothed, or fringed with hairs. The flowers are large, rose-colour or purple, lilac or white. The flower-stalk is slender. The pods are erect. Seed is rarely matured. The plant is 1-2 ft. high, and flowers in April and May, being a herbaceous perennial.

ORDER VIOLACEÆ

Dog Violet (*Viola sylvestris*, Kit. = *reichenbachiana*, Jord.).—The habitat of this plant is woods and shady places, hedgebanks, and thickets. The habit is diffuse, the stem short without a true sobole. The leaves are prolonged, heart-shaped, dark-green. The flowers are small, pale-violet, with a long spur flattened, slender, entire, darker than the petals, not furrowed. The petals are oblong, lilac, narrow, the lower with few parallel nearly simple veins not reaching the margin. The calyx segments are small, indistinct, and hardly produced in fruit. The anther spurs are lance-shaped, narrow. The flowering branches are in the axils, with a central rosette of leaves. The stigma is hooked with a horizontal beak. The fruit-stalks are erect. The plant is 2-6 in. in height. It is in flower between March and August, and is a herbaceous perennial.

Wood Violet (*Viola Riviniana*, Reichb. = *sylvatica*, Fries).—The habitat of this plant is copses, woods, thickets, hedgebanks, and heaths. The habit is similar to that of the last. The stem is short, branched, smooth, with a very short rootstock below. The leaves form a rosette. They are heart-shaped, prolonged. The flowering stems are in the axils. The flowers are violet-blue, with broadly egg-shaped petals, handsome, large, the spur broad and short, pale, flattened, furrowed. The lower petal has many branched veins reaching the margin. The sepals are produced at the base in fruit. The capsule is smooth, 3-angled. The plant is 2-6 in. in height, and flowers in April up till September, and is a herbaceous perennial.

BRITISH FLORA

ORDER CARYOPHYLLACEÆ

Wood Stitchwort (*Stellaria nemorum*, L.).—The habitat of this plant is damp woods, chiefly in the north. The habit is grass-like. The stem is erect or ascending, round, stout, downy above, shining, brittle. The lower leaves are rough above, long-stalked, heart-shaped, the upper stalkless, egg-shaped. The flowers are white, in a loose-panicled cyme on slender flower-stalks, the petals longer than the sepals, deeply cut, narrow. The sepals are blunt, lance-shaped, with membranous margins. There are 3 styles. The capsule is egg-shaped, as long as or longer than the sepals, the fruit-stalk spreading or turned back. The plant is 1-2 ft. in height. It flowers in May and June, and is a herbaceous perennial.

Stitchwort (*Stellaria neglecta*, Weihe, non Bab.).—The habitat of this plant is shady banks. The habit is erect. The plant resembles *S. media*, but has larger leaves, with longer stalks, the upper stalkless, the lower inversely heart-shaped. There are also 10 stamens. The seeds have prominently rounded wart-like knobs. The plant is 3-12 in. in height, or more, up to 18 in., and is in flower from April to July, being a herbaceous annual.

ORDER HYPERICACEÆ

Tutsan (*Hypericum Androsænum*, L.).—The habitat of this plant is thickets. The habit is that of undershrubs in general, the stem being shrubby, erect, square, flattened at the margin. The leaves are large, stalkless, almost heart-shaped to egg-shaped, blunt, aromatic, glandular. The flowers are in terminal cymes, few, yellow, the petals oval, short, oblique, falling, the sepals broad, blunt, unequal, glandular, as long as the petals and stamens. The 3 styles are bent back, shorter than the capsule. The stamens are in 5 groups. The fruit is a black round berry, pulpy, blunt, imperfectly 3-celled. The plant is 1-3 ft. in height, flowering in July and August. It is a perennial undershrub.

Stinking St. John's Wort (*Hypericum hircinum*, L.).—This plant is established in some spots in the country in plantations, but it is not a native species. The habit is shrubby like that of the last, the stem being erect. The leaves are stalkless, lance-shaped. The flowers are yellow, with lance-shaped, acute, falling sepals. The petals are not as long as the stamens. The 3 styles are nearly erect. The plant otherwise closely resembles *H. elatum* (q.v.). The plant is 1-3 ft. in height, and flowers from June to August. It is a perennial shrub.

Tall Tutsan (*Hypericum elatum*, Ait.).—The Tall Tutsan is established in plantations, not being a native of this country, but found in Europe. The habit is that of Tutsan; it is, however, taller. The stems are 2-edged, much-branched. The leaves are heart-shaped to egg-shaped, or acute, longer. The flowers are large, yellow, on 2-winged stalks, in a few-flowered terminal cyme, the petals twice as long as the sepals, which are

broad and unequal and do not fall, and nearly as large as in Tutsan. The petals are as long as the stamens, which are not as long as the nearly erect styles. The capsule is oval. The stem is 3-4 ft. in height, and flowers in June up till August or September, being a perennial shrub.

Rose of Sharon (*Hypericum calycinum*, L.).—This plant is established in plantations, bushy places, hedges, and thickets. The habit is shrub-like, creeping, the stem erect. The stem is nearly simple, square or flattened at the margin. It has creeping suckers, and grows and spreads freely, but rarely sets seed. The leaves are stalkless, oblong, blunt, leathery, with large scattered glands. The flowers are large, yellow, solitary (3-4 in. across). The outer sepals are rounded, half as long as the petals, which are unequal-sided, the former blunt, inversely egg-shaped. The stamens are in bundles of 5. The capsule is egg-shaped, 5-celled at the base. The plant is 6-18 in. in height, flowering from June to September. The Rose of Sharon is a perennial shrub.

Hairy St. John's Wort (*Hypericum hirsutum*, L.).—This plant is found in woods, copses, thickets, hedgerows. The habit is erect. The stem is rounded, downy, nearly simple, the leaves hairy below, egg-shaped, oblong, blunt, shortly stalked, with pellucid or nearly transparent glands (none on the margin), dotted. The flowers are pale-yellow, in the axils, or terminal in forked panicles, the sepals linear-oblong, nearly acute, fringed with shortly-stalked glands. The petals are twice as long as the sepals, and lance-shaped, acute, tipped with stalked glands. The styles fall. The stamens are in bundles of three. The plant is 1-3 ft. in height. It flowers in July and August, and is a herbaceous perennial.

Mountain St. John's Wort (*Hypericum montanum*, L.).—The habitat of this plant is thickets on calcareous soil, bushy limestone hills, copses, in gravelly and chalky soil. The habit is erect or ascending. The stems are smooth, round, rigid, slender, leafless above. The leaves are membranous, egg-shaped, oblong, blunt, stalkless, with pinholes and transparent glands, and black dots near the border, the upper heart-shaped, linear, downy below. The pale-yellow flowers are in dense terminal panicles, fragrant. The petals are without glands, twice as long as the sepals, elliptic, entire, the sepals lance-shaped, acute, with a fringe of shortly-stalked glands. The styles are half as long as the capsule, the stamens in 3 bundles. The plant is 1-3 ft. in height, and flowers from June to August. It is a herbaceous perennial.

ORDER MALVACEÆ

Hairy Mallow (*Althaea hirsuta*, L.).—This species is an alien, found in woods, fields, dry places, cornfields, and cultivated ground. The habit is prostrate or ascending. The stems are stiffly hairy, numerous, ascending, slender, the leaves stiffly hairy, heart-shaped, on long stalks, kidney-shaped, with 5 acute lobes, scalloped, the

upper 3- or 5-lobed, palmate. The flowers are pale-rose or white. The flower-stalks are in the axils, 1-flowered, longer than the leaves. The sepals are lance-shaped and hairy. The carpels are smooth. The carpels are 1-seeded, in a whorl, indehiscent. The plant is 6-18 in. in height. It flowers from June to August. The plant is a herbaceous annual.

ORDER TILIACEÆ

Linden (*Tilia parvifolia*, Ehrh. = *ulmifolia*, Scop. = *cordata*, Mill.).—The habitat of this tree is woods. It has the tree habit, with smooth bark, and drooping branches. The twigs, &c., are smooth, the leaves small, bluish-white, downy in the axils of the nerves below, egg-shaped, heart-shaped, with a long point, finely toothed, smooth below, leathery, thick, opaque above, little longer than the leaf-stalks. The flowers are in cymes, with 5 sepals, and 5 petals, valvate in bud. The flowers are yellowish-green, and sweet-scented. The fruit is downy, round or ellipsoid, angular, ribbed, thin, brittle. The stigma lobes spread at length. The height is 50-60 ft. The flowers are met with in July and August. The tree is deciduous.

Broad-leaved Lime (*Tilia platyphyllos*, Scop. = *grandiflora*, Ehrh.).—This species of lime is an alien and rare, found in old rocky woods. The twigs are downy. It has the tree habit. The leaves are large, downy below, with simple hairs, obliquely heart-shaped below, with woolly tufts in the axils of the veins, thin, membranous, bright transparent green, longer than the leaf-stalks. The flowers are in threes. The ripe fruit is inversely egg-shaped or round, with 3-5 prominent ribs, downy, the angles woody, downy. The tree is 70-90 ft. in height. It is in flower in June and July, and is a deciduous tree.

ORDER GERANIACEÆ

Wood Geranium (*Geranium sylvaticum*, L.).—The habitat of this plant is woods, thickets, in the north, moist meadows, mountain districts in North Britain. The habit is erect. The stem is branched above, erect, downy and glandular above, the radical leaves long-stalked, the stem-leaves stalkless, shield-shaped, with deep lobes, toothed and cut. The flowers are blue-purple, in a cyme, the petals notched, the sepals awned, the flower-stalks 2-1-flowered, erect, the anther-stalks thread-like, fringed with hairs. The fruit-stalk is erect, the seeds netted. The plant is 1-2 ft. in height, and flowers from June to August, being a herbaceous perennial.

Dusky Crane's Bill (*Geranium phaeum*, L.).—This plant is found in plantations, thickets, woods, near parks and gardens. The habit is erect, the stems numerous, loosely hairy, and glandular above, the rootstock blunt. The leaves are rounded and 3-7-lobed, the lobes acute, toothed, cut, the radical leaves long-stalked, the stipules lance-shaped. The flowers are purplish-brown

or black, rarely white, on 2-flowered flower-stalks, the petals wedge-shaped, bent back, rounded, wavy, longer than the sepals, oblong, shortly awned. The carpels are hairy below, transversely wrinkled above, the seeds smooth with pinholes, and ribbed. The plant is 1-3 ft. high, and flowers in May and June, being a herbaceous perennial, growing from a root with long fibres borne on a short, thick, underground stem.

Long-stalked Crane's Bill (*Geranium columbinum*, L.).—The habitat of this plant is dry copses and pastures, calcareous places. The habit is prostrate. The stem is hairless or has turned-back hairs, much-branched, slender. The leaves are broad, on long stalks, with 5-7 lobes, narrow, irregular, divided nearly to the base. The stipules are ovate, lance-shaped. The flowers are rose-colour, with entire, inversely egg-shaped petals, notched, few, the claws fringed with hairs, on long slender flower-stalks, 2-flowered, longer than the leaves. The sepals are awned, spreading, as long as the petals, the calyx angular. The carpels have a few scattered hairs and are not wrinkled, smooth, keeled, the seeds pitted. The plant is 1-2 ft. high, flowering from June to August, and is a herbaceous perennial.

ORDER RHAMNACEÆ

Buckthorn (*Rhamnus catharticus*, L.).—The habitat of this plant is hedges, thickets, woods, chiefly on chalk. The plant has the shrub habit. The plant is rigid, much-branched, with black bark. The branches are opposite and spinous. The leaves are grouped at the end of the shoots, egg-shaped, round, oval, coarsely toothed, the serratures curved, glandular, with spreading nerves, shortly-stalked. The thorns are terminal. The young leaves are downy below. The leaf-stalks are longer than the awl-like deciduous or falling stipules. The flowers are yellowish-green, solitary or grouped in the axils of the leaves on previous year's wood, the calyx of the male flower bell-shaped, of the female cupular, with acute sepals. The flowers have the parts in fours. The plant is dioecious, but each has rudimentary male or female flowers respectively. There are four forms: long-styled male, short-styled male, long-styled female, short-styled female. The styles are 4- or 2-5-lobed, four united half-way up. The flowers are sweet-scented. The drupe is rounded, black, with four stones, which are inversely egg-shaped, grooved on the back. The seeds are notched. The plant is 5-10 ft. high, flowering from May to July, and is a deciduous shrub.

ORDER ACERACEÆ

Common Maple (*Acer campestre*, L.).—The habitat of this tree is thickets and hedgerows, woods and hedges. The habit is the tree habit. The trunk is often thick, with a straight bole, much-branched above, with rough, fissured, and corky bark. The leaves, downy when young, are 5-lobed, kidney-shaped or scalloped, the lobes

BRITISH FLORA

blunt, the leaf-stalk slender. The flowers are green or yellow, in a corymb, on short stalks. The petals are linear-oblong, hairy, and the sepals are similar, broader. The horizontal wings of the fruit are linear-oblong, curved, downy. The stamens are as long as the corolla. The Common Maple is 10-30 ft. in height, flowering in May and June, and is a deciduous tree.

Sycamore (*Acer Pseudoplatanus*, L.).—The habitat of this tree is plantations, hedges, even in the N. of Scotland. The Sycamore has the tree habit. The trunk is stout, with smooth, cracked bark, which falls off with age. The leaves, yellow at first, are 4-5-lobed, with unequal teeth, 5-angled, opposite, bluish-green below, the lobes scalloped or toothed. The flowers are in long pendulous racemes, with short flower-stalks. The stamens are twice as long as the corolla. The wings of the fruit, a scimitar-like samara, are spreading. The Sycamore grows from 40-60 ft. in height, and flowers in May and June. It is a deciduous tree.

ORDER LEGUMINOSÆ

Bitter Vetch (*Vicia Orobus*, D. C.).—The habitat of this plant is northern rocky woods or western wooded rocky districts. The habit is erect or ascending, the stem downy, stout, with tendrils or petioles reduced to a short slender point or wanting. The leaves are stalkless, the leaflets are egg-shaped, oblong, linear, acute, hairy, in 7-10 pairs. The stipules are half-arrow-shaped, toothed below. The 6-20 flowers are white with a purple tinge, in loose racemes, ranged on one side. The flower-stalk is longer than the leaves. The calyx teeth exceed the tube, the upper two being triangular and longer than the flower-stalks. The pods are oblong, lance-shaped, acute below and above, smooth. The seeds are 3-5. The plant is 1-2 ft. in height. It flowers in May and June, and is a herbaceous perennial.

Pencilled Wood Vetch (*Vicia sylvatica*, L.).—The habitat of this plant is woods, thickets, rocky woods, and cliffs, &c. The habit is trailing. The rootstock is creeping. The stem climbs by forked tendrils. The leaves are stalkless, the leaflets oblong, blunt, with a blunt point, smooth, membranous, in eight pairs. The stipules are moon-shaped, toothed below, the teeth bristle-like, spreading. The flowers are white with blue veins, in loose racemes, 6-18, ranged all one side. The flower-stalk exceeds the leaves, and the ultimate stalks are as long as the calyx tube, which is inflated on the upper side. The calyx teeth are not so long as the tube, awl-shaped. The pods are oblong, lance-shaped, with a long point, each end curved, with 3-4 seeds. The height of the plant is 2-6 ft., and it flowers from June to August, being a herbaceous perennial.

Wild Pea (*Lathyrus sylvestris*, L.).—The habitat of this species is woods, thickets, rocky thickets, and sea cliffs. The habit is climbing, the root-stock creeping. The stem is winged, the plant

being smooth, bluish-green. The leaflets are large, broad, sword-shaped, with parallel veins, linear-lance-shaped. The stipules are half-arrow-shaped, sickle-like, with lance-shaped basal lobes. The leaf-stalk is sometimes also winged. The tendrils are slender and branched. The bracts are thread-like. The flowers are purple, in a raceme, 3-10, on long flower-stalks, the ultimate stalks longer than the calyx. The standard is rose-colour, the wings purple. The calyx teeth are awl-shaped, triangular. The smooth pods are stalkless, winged above, with 10-14 seeds half-enclosed by the hilum and flattened along the border, rough, with few distant wart-like knobs. The plant is 5-6 ft. in height, flowering from July to September, and is a herbaceous perennial.

Common Bitter Vetch (*Lathyrus macrorhizus*, Wimm. = *montanus*, Bernh.).—The habitat of this vetch is woods and bushy places, thickets, copses. The stem is winged and simple, without tendrils. The leaves have lobes each side of a common stalk, the leaflets in 2-4 pairs, though green below, with nerves, oblong, elliptic, smooth, blunt. The stipules are half-arrow-shaped, toothed below. The 2-4 flowers are variegated red and blue, turning green or yellow when faded, on slender stalks, as long as, or longer than, the leaves, the ultimate stalks less than the calyx, with triangular teeth less than the tube. The pods are cylindrical, with round seeds, partly surrounded by the hile. The plant is 6-15 in. in height, and flowers from May to August, being a herbaceous perennial.

ORDER ROSACEÆ

Bullace (*Prunus insititia*, L.).—The habitat of this plant is woods and hedges. The habit is that of a shrub, in general like that of the Sloe, which it resembles (though it is taller), but the straight branches are not, or very slightly, spinous, the bark brown, the leaves oblong, inversely egg-shaped, larger and broader, with blunt teeth, downy below, the flowers appearing usually with the leaves with broader petals, the flower-stalk downy, the fruit a drupe, round, drooping, black or yellow. The height is 6-15 ft. It flowers in March onward till May, and is a deciduous shrub.

Gean (*Prunus Avium*, L.).—The habitat of this tree is woods. The habit is the tree habit. There are no suckers. The branches are rigid, short, stout, ascending. The leaves are drooping, limp, large, pale-green, oblong, inversely egg-shaped, downy below, long-stalked, the margin toothed. The leaf-buds have the outer scales bent back, the flower-buds are not leafy. The flowers are white, in nearly stalkless umbels, the petals divided into two nearly to the base, and stalked, the corolla open, and limp, the tube of the calyx narrowed above, the sepals entire. The fruit is heart-shaped, sweet or bitter, the juice staining black. The tree is 20-30 ft. high, flowering in May, and deciduous.

Bird Cherry (*Prunus Padus*, L.).—The habitat of this tree is woods and hedges, especially in North Britain. The Bird Cherry has the tree

habit, with drooping, clustered branches. The leaves are folded upon each other lengthwise in bud, elliptic, lance-shaped, smooth, finely doubly-toothed, unequally heart-shaped below, downy in the axils of the veins. The stipules are awl-like, linear, glandular, toothed. The flowers are white, erect, then drooping, in long drooping racemes in the axils, or terminal, and appear after the leaves. The flower-stalks are erect in fruit. The fruit is round, or oblong, egg-shaped, black, bitter. The nut or stone is wrinkled, rounded. The tree is 10-25 ft. in height. It is in flower in May and June, and deciduous.

Willow-leaved Spiraea (*Spiraea salicifolia*, L.).—This plant is an alien in this country and not indigenous, growing in plantations and hedges. It multiplies freely by stolons. The habit is shrub-like. The branches are smooth, round, straight. The leaves are lance-shaped, oblong, unequally toothed, smooth. There are no stipules. The flowers are pink or flesh-coloured, in compound, erect, dense, terminal racemes, nearly cylindrical. The petals are not so long as the stamens, which project. The carpels are smooth, and contain many ovules. The plant is 3-5 ft. in height, and flowers in July and August, and is a deciduous shrub.

Raspberry (*Rubus Idæus*, L.).—The habitat of this plant is woods and thickets. The habit is shrubby. The stem produces numerous suckers, and is erect, with many prickles, round. The leaves have lobes each side of a common stalk, with 3-5 leaflets, stalkless, coarsely toothed, egg-shaped, with a long point, hoary-white below. The flowers are drooping. The petals are white, short. The red or amber drupes fall when ripe. The Raspberry is 4-6 ft. in height, and flowers from June to August, being a deciduous shrub.

Rubus fissus, L.—This shrub is a native species found in sunny spots and wet places. The habit is shrub-like, erect or arched. The stem bears many slender awl-like scattered prickles, from an oblong, slightly-dilated base. The leaves are folded, hairy below. The basal leaflets are stalkless. The stamens and style nearly equal each other. The fruiting calyx is erect to right-angled. The fruit is dark-red. The height is 1-2 ft. The plant flowers from June to August, and is a deciduous shrub.

Rubus nessensis, W. Hall = *suberectus*, And.—The habitat of this shrub is wet thickets, boggy woods, and heaths. The habit is shrub-like, the stem erect. The leaflets are pale-green, nearly smooth, flexible, flat, those at the base nearly stalkless, the upper ones narrow below. There are few, short prickles, conical, with a long base, at the angles, or absent. The pale stamens are longer than the style. The sepals are bent back. The fruit is dark-red. The plant is 3-6 ft. high, flowering in June and July, and is a deciduous shrub.

Rubus sulcatus, Vest.—The habitat of this plant is wood borders. The habit is shrub-like, the stem suberect, the plant luxuriant. The stem is furrowed. The leaves are 5-lobed. The leaflets are

large, distant, the basal ones stalked, the terminal long-stalked, with a long point, oval. The panicle is long, loose, in a raceme, and handsome. The stamens at first exceed the style. The fruiting sepals are turned back. The fruit is remarkably long.

Rubus plicatus, Wh. & N.—This Rubus is a native species, found in woods, heaths, and moors. The habit is shrubby. The stem is suberect. The leaflets are plaited, softly hairy below, coarsely toothed, the terminal leaflet egg-shaped, heart-shaped, with a short point, the basal one nearly stalkless. The lateral leaflets of the flowering shoot are rhomboidal, egg-shaped, enlarged at the base. The panicle is rather short, more or less a raceme. The stamens and style are of about the same length. The fruiting sepals are more or less at right angles. The plant is 4 ft. in height, flowering in June and July, and is a deciduous shrub.

Rubus nitidus, Wh. & N.—The habitat of this plant is thickets, heaths, and stream sides. The habit is shrub-like. The stem is suberect, rooting. The leaves are shining (like the calyx). The mature leaves are flat, the leaflets bright-green, thinly hairy on the prominent nerves below, the terminal oval, oblong, acute, the basal shortly-stalked. The prickles are numerous, long, slender, crowded, straight, or hooked, especially on the panicle. The panicle bears many small cup-like flowers. The stamens are longer than the style.

Rubus affinis, Wh. & N.—The habitat of this species is open woods, sandy commons, and heaths. The habit is shrub-like, the stem suberect or arched, not rooting, very tall. The prickles are long and narrow. The leaves are thick, overlapping, wavy at the end, grey, silky below. The terminal leaflet is egg-shaped, cordate, with a long point, those of the flowering shoot narrowed below. The panicle bears cymose branches, and is armed with long, slender prickles. The flowers are large and cup-like. The sepals are bent back. The plant is very tall, flowering in July and August, and is a deciduous shrub.

Rubus cariensis, Genev.—This species is locally abundant in the west, especially in N. Devon. The habit is shrub-like, suberect, high-arching, the plant very dark purple. The leaves are very large, deeply cut, with an ash-coloured felt, or softly hairy below, the terminal one oblong, oval, with a long narrow point. The panicle is dense, compound, cylindrical, very strong. The sepals have an ash-coloured felt. The bracts and flower-stalks have occasionally a few, short-stalked glands.

Rubus holerythros, Focke.—The habitat of this species is sandy commons and wood borders. The plant has the shrub habit, growing in clumps, arched, the stem lustrous, the leaves very large, greyish, softly hairy below. The leaflets are wide-spreading, with even, scalloped, bluntly-pointed teeth, soft and pale below at first. The panicle is a raceme above, with very showy flowers on long stalks. The petals are very large, and pink. The stamens, which are long, and the style, are also

pink. The sepals are greyish-olive. The fruit is bright-red, then glossy-black.

Rubus latifolius, Bab.—The habitat of this species is open woods. The habit is shrub-like, the stem furrowed, very soon prostrate, slightly hairy. The leaves are dull-green, very large, thinly hairy. The leaflets are all broad, with compound, deeply-cut teeth, harsh to the touch below, the terminal leaflet heart-shaped, with a long point. The panicle is narrow, blunt, cylindrical, with a densely hairy rachis and conspicuous bracts. The sepals are grey with a yellow base. The plant flowers in July and August, and is a deciduous shrub.

Rubus imbricatus, Hort.—The habitat of this plant is wood borders and open commons. The habit is prostrate or arched, remarkably branched. The leaflets are convex, wrinkled, overlapping, the terminal leaflets roundish, egg-shaped, with an abrupt, long point, heart-shaped, the basal leaflets small. The panicle has distant, long, very strongly ascending lower branches, and several lobes. The top of the panicle and the flower-stalks are scarcely felted, the sepals uniformly grey and hairy. The ripe fruit is glossy-black. The plant flowers in July and August, and is a deciduous shrub.

Rubus carpinifolius, Wh. & N.—The habitat of this plant is wood borders, hedges, heaths, open places in hilly districts. The habit is erect, arched. The leaves are plaited, with long teeth, soft beneath, the terminal leaflets long, usually oval, with a long point. The panicle is narrow, pyramidal, or in a sort of raceme, with branches erect, or widespread. The sepals are widely spreading in fruit. The petals are white. The panicle is very prickly and pale-coloured. The fruit is large. The plant flowers in July and August, and is a deciduous shrub.

Rubus incurvatus, Bab.—The habitat of this plant is thickets, open woods, heaths, and hilly slopes. The habit is prostrate, arched. The leaflets are hollowed, lobed, toothed, with incurved wavy edges, greenish-white, soft, with felted down below, thick. The terminal leaflets are broadly egg-shaped, heart-shaped. The panicle is long, the top ultra-axillary, the branches short and widespread. The flowers are pink, as also the stamens and style. There are no glands. The plant flowers in July, and is a deciduous shrub.

Rubus Lindleianus, Lees.—The habitat of this species is wood borders and hedges. The habit is erect, and arching, the stem shining (hence *nitidus*, Bell Salter), glossy. The leaflets are inversely egg-shaped, wedge-shaped, wavy-edged, with irregular, shallow teeth, and narrow below. The panicle has a long, broad, cylindrical, blunt top, and long, nearly equal, widespread branches, in a cyme. The rachis is hairy. The petals are white. The fruit and drupelets are small. The plant flowers in July and August, and is a deciduous shrub.

Rubus argenteus, Wh. & N. (= *erythrinus*, Genev.).—The habitat of this species is woods,

hedges, and open sunny places. The habit is high-arching. The stem is dark-purple (hence *erythrinus*). The prickles have a wide base. The leaflets are leathery, with an ash-coloured felt below, the dark-purple of the stem extending frequently to the leaf-stalk and midrib, convex, inversely egg-shaped, with a blunt, long point, the terminal leaflets long-stalked, broadly egg-shaped. The panicle is loose, pyramidal, with a narrow, rounded top, and strongly-ascending lower branches. The fruit and drupelets are large. The panicle distinguishes it from the last, as well as the leaves, fruit, and colour of the stem, &c.

Rubus durescens, W. R. Linton.—This plant is found in hedges by the roadside, and in woods. The habit is arching. The stem is purplish, with leathery leaflets, brownish-green, hairless on the upper surface, with a few short, stiff hairs on the prominent nerves below, the larger teeth wide-spreading. The leaflets are oblong, egg-shaped. The terminal leaflets are egg-shaped, heart-shaped. The panicle is broad, short, cylindrical, in a corymb, the branches widespread, forming a cyme, the top broad but hardly blunt. In the panicle the plant resembles *R. Lindleianus*. The colour and leaves, &c., are as in *R. erythrinus*.

Rubus rhamnifolius, Wh. & N.—The habitat of this species is wood borders, thickets, and hedges. The habit is arching. The leaflets are thick, flat, with ash-coloured or white felt below, and finely-pointed close and simple teeth, the terminal ones often not twice the length of the leaf-stalk, with a blunt point, and heart-shaped below. The terminal ones are very long-stalked, roundish, egg-shaped, heart-shaped. The basal ones are not overlapping. The panicle is rather close and cylindrical, the flowers cup-like, the petals roundish, white. The sepals are turned back. The stamens are erect and longer than the style. The plant flowers in July and August, and is a deciduous perennial.

Rubus nemoralis, P. J. Muell.—The habitat of this plant is wood borders and hedges. The habit is arching. The leaflets are pale-green both sides, rather finely and evenly toothed, paler, and thinly hairy below. The panicle is very loose, ascending, leafy, at first pyramidal, then forming a corymb, with several simple floral leaves above, and very long lower strongly-ascending branches forming a raceme-like corymb. The petals are pink. This species is handsome, strong, long. The narrow base of the terminal leaflet is heart-shaped as age advances. The numerous floral leaves, the long lower branches of the panicle distinguish this species. Its nearest ally is *R. rhamnifolius*.

Rubus pulcherrimus, Neum.—The habitat of this plant is wood borders, hedges, and commons. The habit is prostrate, arching, forming extensive patches as underwood in woodlands. The stem is rather hairy, dull-red or green. The prickles are widespread or bent downwards. The leaves are 6-7-lobed. The leaflets are convex, leathery, dull grey-green, with a greenish ashy felt below, opaque above, the terminal leaflets 2½-3 times as long as the leaf-stalk. The panicle is long, with

narrow ultra-axillary top, with numerous stalked glands on the rachis, flower-stalk, and bracts. The petals are broad, small, and pink. Some forms have white petals and no glands. The distinctive features are the lobed leaves, narrow and many-flowered panicle, stalked glands, and pink petals.

Rubus Lindebergii, P. J. Muell.—The habitat of this plant is thickets, open places, dry and stony. The habit is prostrate, arching, the stem tall. The prickles are stout, sickle-like, or hooked, especially on the panicle. The leaves are 5-lobed. The leaflets are pale greyish-green above, narrowed below, with even, nearly simple teeth, the terminal are narrow, inversely egg-shaped, about twice as long as the leaf-stalk. The panicle is narrow, without glands, wavy, with crowded, strong, sickle-like prickles, and short branches, with few flowers. The petals are white, large, inversely egg-shaped, with long claws.

Rubus mercicus, Bagnall.—The habitat of this species is hedges. The habit is erect, arching. The prickles are rather unequal, bent back, and scattered. The leaves are 3-5-lobed, arising from a common centre with lateral lobes, the terminal leaflet broadly oval or roundish, with short, blunt, narrow point, and entire, or nearly entire, base, more than twice as long as the stalk. The panicle is loose, sometimes glandular, little narrowed to the top, forming a corymb. The rachis and flower-stalk are clothed with long, fine hair. The petals are white, becoming pink. The stem and rachis are dark-purple.

Rubus villicaulis, Koehl.—The habitat of this plant is woods, wood borders, hedges, open stony places. The habit is high-arching. The stem is hairy (as the Latin specific name indicates). There are many long, straight prickles, wide-spreading, or bent back. The leaflets are egg-shaped or oval, with a narrow, long point, soft, with long silky white hairs below. The panicle is open, long, compound, with long, bent-down slender prickles, the branches forming a cyme, the rachis softly downy. The stamens are much longer than the styles. The plant flowers in July and August, and is a deciduous shrub. It is distinguished by the numerous long, straight prickles, shaggy rachis and flower-stalks, prickly, branched panicle, broad, oval leaflets, softly hairy below.

Rubus Selmeri, Lindeb.—The habitat of this species is woods and sandy and gravelly commons. The habit is similar to the last. The stem and leaves are not so hairy. The prickles are sickle-like. The leaflets are concave, with wavy margin, smooth above, thinly hairy below, the terminal leaflets roundish, egg-shaped. The rachis is thinly hairy, with many strongly sickle-like or hooked prickles. The flowers are showy, star-like. The petals are bright-pink. The stamens are short, sometimes not longer than the style. In the young state the plant is like *R. gratus*, as when large-flowered.

Rubus rhombifolius, Weihe.—The habitat of this plant is thickets and open commons. The habit

is similar to the last, the stem dark-red. The prickles are broad-based, the leaflets rhomboid or egg-shaped, with a long, narrow point, green or white-felted below. The leaflets in mature leaves are distant, all narrow at both ends, with a long tip, with short hairs beneath. The panicle is pyramidal, with sickle-like prickles, with strongly bent-back white sepals, the petals, style, and long stamens all red. The lower panicle-branches are long and strongly ascending. The plant is intermediate between *R. villicaulis* and *R. Selmeri*, distinguished by the thinner, narrower, acuminate, rhomboidal leaflets, with short hair beneath, pyramidal panicle, bent-back sepals, and red flowers.

Rubus gratus, Focke.—The habitat of this plant is arching, prostrate. The stem is furrowed. The prickles are rather short, with a broad base, spreading, or somewhat bent down. The leaves are large. The leaflets are at first softly downy, later bare below, broad, coarsely, irregularly doubly-toothed. The panicle is leafy, branched, few-flowered. The rachis is clothed with long hair. The flowers are very large, the petals pink or with a pink claw. The sepals are erect in fruit. The pollen-grains are large, equal, regular. The fruit is large and oblong. The plant is luxuriant. It is distinguished from *R. Selmeri* by the rounder, more wavy leaflets, strong sickle-like prickles, cylindrical panicle, turned-back fruiting sepals, and short stamens.

Rubus leucandrus, Focke.—This is a local plant, found in thickets, hedges, and commons. The habit is arching, prostrate. The stem is blunterangled. The prickles are rather long, wide-spreading to some extent. The leaflets are softly hairy below, overlapping, hollow, the terminal leaflet egg-shaped, heart-shaped, with a long narrow point. The panicle bears no glands, is irregularly branched, with felted flower-stalks, and conspicuous flowers. The fruiting sepals are turned back. The flowers are showy with large petals, pure white like the stamens (hence *leucandrus*). The fruit is large and oval. The plant is intermediate between *R. affinis* and *R. gratus*.

Rubus ramosus, Briggs.—The habitat of this species is rocky, bushy places. The habit is straggly, erect, arched. There are few prickles. The leaves are 3-5-lobed, arising from a common centre with lateral leaflets. The leaflets are convex, leathery, shining above, coarsely and irregularly toothed, with close ashy or white felt under the hairs, the terminal leaflets oblong or slightly inversely egg-shaped, with a blunt point. The panicle is loose, with long branches, forming a corymb at the top. The rachis, flower-stalk, and sepals are ashy-white felted and thinly hairy. The sepals are loosely turned back. The fruit is small and poor. The plant is near *R. Questieri* in the felted panicle and shape of leaflets only. It flowers in July and August, and is a deciduous shrub.

Rubus thyrsoides, Wimm.—The habitat of this species is thickets and hedges. The habit is striking, tall, erect, high-arching. The stem is strong, smooth, and rarely roots. The leaflets are flat or hollowed, nearly smooth above, with

pale felt below, with deeply-cut, compound teeth, the terminal leaflet oval, or egg-shaped, with a long, narrow point. The panicle is long, the ultra-axillary part cylindrical above, weakly armed, the lower branches with sickle-like prickles. The calyx is hairy and felted. The flowers are showy, the fruit fine. The panicle and foliage are exceptionally fine. The plant flowers in July and August, and is a deciduous shrub.

Rubus Godronii, Lecoq. & Lamotte = *argentinatus*, auct.—The habitat of this species is wood borders, bushy places, and hedges. The habit is high-arching at first, then climbing, or bending low and rooting. The stem is pruinose below, hairy. The prickles on stem and panicle are long and rather unequal, straight or sickle-like. The leaflets are rather leathery, shining above, greenish, white-felted, with shining hairs below, 5-lobed, finger-shaped, or with lobes arising from a common centre with lateral leaflets, the terminal leaflet with rounded or nearly heart-shaped base. The panicle is loose, pyramidal, narrowed above. The rachis and flower-stalks are felled, with thick, soft hair. The flowers are showy, with long flower-stalk, bright-pink flowers, the sepals with yellowish-grey felt, and hairs loosely turned back. The pink stamens are much longer than the green styles. The plant flowers late.

Rubus rusticanus, Merc.—This species is found in thickets and hedges, in open ground, at low altitude, and by the sea-coast, being especially common on the East coast. The habit is arching, prostrate, climbing, rooting. The stem is furrowed, pruinose, stellately downy. The prickles have a very wide base. The leaflets are leathery, oval, or inversely egg-shaped, convex, with close, white-felted down below, and the terminal leaflet is inversely egg-shaped, with a blunt point. The panicle is long, narrow, cylindrical. The rachis is furrowed, with strong, stout-based, hooked, and sickle-like prickles. The flower-stalks are also felled and hooked. The stamens are equal to or less than the style. The sepals in flower and fruit are turned back. The plant flowers in July and August, and is a deciduous shrub.

Rubus pubescens, Weihe.—The habit of this Rubus is high-arching at first, then low and rooting, the stem having a rather thick coat of short stellate down. The leaves are 5-lobed, finger-shaped, the leaflets with irregular shallow teeth, grey or greenish, white-felted below, oval or inversely egg-shaped, with a long, narrow point, the terminal one with an entire base. The panicle is rather loose, long, felled, hairy, with widespread few-flowered branches, and strong hooked or sickle-like prickles on the branches. The sepals have an upwardly-curved tip. The plant is intermediate between *R. thyrsoides* and *R. rusticanus*.

Rubus sylvaticus, Wh. & N.—This is an uncommon species found in woods, thickets, by bushy river sides. The habit is arching, prostrate, rarely climbing. The prickles are short, crowded near the base of the stem, awl-shaped. The leaves are 5-lobed. The leaflets are hairy both sides, the terminal one slightly inversely egg-

shaped, or oval, with entire or notched base. The panicle is dense, long, with small, crowded, needle-like prickles, and softly hairy rachis and flower-stalk. It is not glandular. The fruiting sepals are loosely turned back. The carpels are hairy. The plant is like *R. macrophyllus* in the small prickles and hairy character, and also like *R. villicaulis* and *R. Lindleyanus*, but less prickly and more softly downy than either.

Rubus myricae, Focke = var. *hesperius*, Rogers.—The leaves of this species are broad, 5-lobed, with 3 lobes radiating from a common centre, and 2 lateral ones, with very compound finely-pointed teeth, the terminal leaflet roundish, egg-shaped, with a long narrow point. The panicle is more compound than in the type (not found in Britain), more prickly, with many sunk, nearly stalkless, glands on the rachis, the panicle being long, pyramidal, and compound. The fruiting sepals are widespread. The plant is like *R. sylvaticus* and *R. hirtifolius*.

Rubus lentiginosus, Lees.—The habitat of this species is rough, rocky, and bushy ground. The habit is arching, prostrate. There are numerous prickles. The leaves are 3-5-lobed, with finely pointed, compound, deeply-cut teeth, thinly hairy only on the nerves beneath, the terminal one oblong or inversely egg-shaped, with rather narrow, notched base. The panicle is rigid above, blunt, forming a raceme, with 1-2 long-stalked flowers, widespread branches, and nearly stalkless terminal flowers. The prickles are crowded on the rachis and flower-stalks; turned down or shortly hooked. The sepals are erect in fruit. The stamens and style are nearly of the same length. The fruit is oblong. The plant differs in habit from *R. nitidus*, approaching *R. Colemanni* and *R. Questieri*. The form of the panicle is very characteristic.

Rubus macrophyllus, Wh. & N.—The habitat of this plant is woods and thickets, and it appears to thrive in the shade. The habit is arching, prostrate, climbing, much-branched. The leaves are 5-lobed, finger-shaped, often very large. The leaflets are smooth above, softly hairy below, doubly and widely toothed, the terminal leaflet oval to heart-shaped, with a long narrow point. The panicle is loose, normally weak, with grey felt, and a hairy rachis, and flower-stalk, with weak, turned-down, or rather sickle-like prickles. The lower branches are very distant. The sepals are shaggy, with grey felt below, strongly bent back. The flowers are of medium size. The carpels are smooth. The plant flowers in July and August, and is a deciduous shrub.

Rubus amphichloros, P. J. Muell.—The leaves of this species are 3-5-lobed, finely and evenly toothed. The terminal leaflet is roundish to oval. The panicle is long and loose. The sepals are loosely turned back. Dr. Focke regards it as distinct from *R. amplificatus* by the shape or rounded outline and fine toothing of the leaflets.

Rubus Questieri, Lefv. & Muell.—The habitat of this species is woods and thickets in rough rocky ground. The leaves are 5-lobed, finger-

shaped, with 3 lobes radiating from a centre, and lateral leaflets, the same colour each side. The leaflets are thinly hairy, and green each side, long and narrow, oval or inversely egg-shaped, with a long narrow point. The panicle is long, loose, narrow, with widespread upper branches, over-topped by the very narrow, simple, floral leaves. The rachis and calyx are grey-felted. The flower-stalk and sepals, which are strongly bent back, have abundant white felt. The long narrow panicle and white-felted rachis, flower-stalk, and sepals, and green leaves help to distinguish it. The plant approaches *R. amplificatus* and *R. Colemanni*.

Rubus Salteri, Bab.—The habitat of this species is woods, thickets, and open rough ground, and hedges. The habit is arching, prostrate, the stem furrowed, angular, and nearly smooth. The prickles are rather widespread, and slender. The leaves are chiefly 5-lobed, with 3 lobes radiating from a common centre, and 2 lateral lobes, with compound, deeply-cut teeth above. The leaflets are rather overlapping, nearly smooth above, with ashy felt below, and loose, or deeply cut and lobed, or closer and shallow and finely pointed, the terminal one long-stalked, with a long point, and entire or heart-shaped below. The panicle is long, cylindrical above, with 1-3 flowers on long stalks, widely-spreading branches, and blunt top. The long-pointed sepals embrace the fruit. It flowers in July and August, and is a herbaceous shrub. The soil is siliceous, &c. The species approaches *R. hirtifolius*, but has a less hairy stem, more deeply cut leaflets, smooth, and ashy-felted, a less glandular rachis and flower-stalk.

Rubus Colemanni, Babington.—The habitat of this species is thickets, hedges, and heaths. The habit is arching, the stem having many flattened prickles, and occasionally acicles and stalked glands, with a very long, broad base. The leaves are convex, 5-lobed, with 3 lobes radiating from a centre, and 2 lateral. The leaflets are the same colour each side, green and hairy on the veins below. The leaf-stalks are very prickly, the terminal leaflet is broadly inversely egg-shaped, with a long narrow point, and heart-shaped. The panicle is long and pyramidal. The rachis and flower-stalk are very strongly armed with prickles, acicles, and stalked glands. The fruiting sepals are loosely turned back. The plant flowers in July and August, and is a deciduous shrub. The soil is siliceous, &c. The plant is close to *R. affinis*, Wh. & N., and *R. infestus*, Weihe.

Rubus Sprengelii, Weihe.—The habitat of this species is woods, thickets, and heaths. The habit is arching, soon nearly prostrate, the stem having unequal bent-back prickles, and is roundish, hairy, often slightly glandular. The leaves are usually 3-lobed, the same colour each side. The leaflets are thin, coarsely and irregularly toothed. The panicle is short, loose, diffuse, with long widely-spreading branches, with few flowers, long slender flower-stalks, usually glandular. The rachis and flower-stalks are softly felted, with few or many

sunken glands. The petals are bright-pink. The stamens are pink, not longer than the style, and not united below. The loosely-branched panicle, long flower-stalks, short stamens, and erect fruiting sepals are characteristic. It flowers in June and July, and is a deciduous shrub.

Rubus orthoclados, Ley.—The habitat of this plant is woodlands. The habit is very high arching, or suberect. The stem has some nearly stalkless glands. The leaves are 3-5-lobed, with 3 lobes radiating from a common centre, 2 lateral, the same colour each side. The panicle is weak and glandular, in a raceme or corymb above. The stalked glands are longer than the hairs. The sepals are externally olive, with narrow white margin, the points embracing the fruit. The carpels are hairy at the tip. The plant approaches the last and *R. hesperius*.

Rubus hypoleucus, Lefv. & Muell. = *micans*, Gren. & Godr.—The habitat of this plant is bushy places and open stony ground. The habit is low-arching. The stem is clothed with dense felt, or close, short hair, and is slightly glandular. The leaves are 3-5-lobed, with 3 lobes radiating from a common centre, and 2 lateral. The leaflets are greyish-green, opaque above, with ashy felt and soft hair below, with compound strongly and deeply cut toothings, with a long, narrow point. The panicle is loose, the branches long, nearly or quite widespread, forming a corymb. The rachis is wavy. The sepals are strongly bent back. The whole plant is greyish. The chief characters are the grey tint, close-haired and felted sepals, deeply-cut leaflets, and wavy panicle rachis.

Rubus hirtifolius, Muell. & Wirtg.—The habitat of this plant is bushy places, hilly districts, and it is locally abundant in West England and Wales. The stem is considerably hairy, rarely glandular or aciculate. The leaves are 5-lobed. The prickles on the panicle have a long base. The leaflets have shining, close hair, and are often much wrinkled above, hairy, with prominent ribs below. The terminal leaflet is variable, usually egg-shaped, with a narrow, long point. The panicle has a long, loose, ultra-axillary top. The rachis and flower-stalk are softly hairy. The petals are narrow, pink, soon falling. The flowers are very showy, white. The fruiting sepals are widespread. The fruit is oblong. The soil is siliceous. It approaches *R. macrophyllus* and *R. pyramidalis*, distinguished from the latter by the less velvety leaves, looser, broader, less leafy panicle, ascending fruiting sepals, and oblong fruit.

Rubus iricus, Rogers.—The stem of this species is stout, with many widespread, white hairs. The leaves are large, 5-lobed, with very long, narrow stipules, fringed with hairs. The leaflets are thick, leathery, with an ashy felt below when young, opaque and rough above, the terminal leaflet broadly egg-shaped, with a long, narrow point, with compound teeth. The panicle is blunt, stout, broad, very large, broadly cylindrical, the ultra-axillary top forming a corymb, the branches stout, nearly widespread, the

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rachis, flower-stalk, and base of the sepals clothed with dense, yellowish-grey, soft hairs. The sepals have a long, narrow point, strongly bent back when the petals fall. The petals are large, bright-pink. The plant is very stout and hairy. It resembles most *R. mollissimus*.

Rubus pyramidalis, Kalt.—The habitat of this species is wood borders, hedges, bushy and heathy places. The habit is nearly prostrate. The prickles are strong and short. The leaves are 5-lobed, finger-shaped. The leaflets are thick, soft, velvety beneath, convex, coarsely toothed. The panicle is long, truly pyramidal, with close, 1-3-flowered, short, widespreading branches in the long, ultra-axillary part. The rachis is straight and rigid. The petals are oval. The fruiting sepals are turned back. It flowers in July and August, and is a deciduous shrub. The soil is sandy, siliceous, &c. It is intermediate between *R. villicaulis* and *R. leucostachys*.

Rubus leucostachys, Sm.—The habitat of this plant is wood borders, thickets, hedges, and rough banks. The habit is arching, prostrate. The stem is woolly and hairy, densely felted. The prickles are long and nearly straight, very strong. The leaflets are broad, softly yellow and white-felted below, round, wavy at the edge, with nearly simple, even, shallow teeth, the terminal leaflet nearly round, with a blunt point. The panicle is long, cylindrical. There are few stalked glands. The petals are round. The stamens are only just longer than the style. The fruiting sepals are bent back. The plant flowers in July and August, and is a deciduous shrub.

Rubus lasiocladus, Focke.—The stem of this plant has a dense mat of felt and long hair. The leaves have also a white felt below, and irregular deeply-cut teeth. The terminal leaflet is oval or roundish. The panicle is broad, very prickly, strongly developed. The rachis and flower-stalk are densely hairy and felted, with crowded, slender, large-based, sickle-like, and bent-down prickles. The petals are white. The plant differs from *R. rusticanus* in the long hairs on the stem and rachis with straight prickles, more hairy leaves, prickly panicle, white petals, and wide-spreading fruiting sepals, resembling also *R. leucostachys*, being a cross between the two.

Rubus criniger, Linton.—The habitat of this species is woods and bushy places. The stem is densely hairy and pruinose. The leaves are 5-lobed, with 3 lobes radiating from a common centre, 2 lateral. They are greyish-green. The leaflets are not overlapping, irregularly lobed, toothed, ashy-felted, with prominent ribs beneath. The terminal leaflet is egg-shaped, with a long, narrow point. The panicle is narrowed above, the top blunt, with long lower branches, like secondary panicles. The rachis and flower-stalk are covered with very unequal stalked glands and small acicles. The plant resembles *R. Geleritii*, *R. Leyanus*, *R. Drejeri*, and *R. scaber*.

Rubus Lettii, Rogers.—The habitat of this plant, first found in Ireland (now in two vice-counties there), is woods. The habit is high-

arching. The stem is stout, bluish-green, clothed with long, fine, shining hairs. The acicles are very unequally scattered, and stalked glands very rare or absent. The prickles are remarkably flattened and straight, long, slender. The leaves are greyish-green, the leaf-stalks long, with many unequal, partly gland-tipped organs. The panicle is cylindrical, the lowest branches moderately long and nearly erect. The rachis has very close, grey felt under the long hairs, with some of the long, slender prickles gland-tipped. The prickles are almost invariably straight and generally widely spreading. The sepals are bent back. The plant is remarkably grey. It resembles *R. Questieri* and *R. micans* or *R. criniger*, distinguished by the flattened slender prickles, inversely egg-shaped, terminal leaflet, more finely-pointed teeth, &c.

Rubus adenanthus, Boul & Gill.—The prickles on the stem of this species are strong, with numerous pricklets and stalked glands. The leaves are 3-5-lobed, with 3 lobes radiating from a common centre and 2 lateral, greyish-green, with ashy felt below, and compound deeply-cut teeth. The leaflets are ashy-felted and thinly hairy below, the terminal one broadly oval. The panicle is long, glandular, forming a more or less pyramidal corymb. The rachis and flower-stalk have crowded soft hair, which obscures the numerous unequal acicles and stalked glands. The sepals are long, widespreading, with sunken glands and long points ascending when the petals drop. The plant approaches *R. micans* in leaf characters and hairy stems, but is also like Radulan forms in other respects.

Rubus Boræanus, Genev.—The habitat of this species is bushy places and hedges. The stem is not felted. The pricklets are usually numerous, with a stout base. The leaves are 5-lobed, with 3 lobes radiating from a common centre and 2 laterals, and 3-lobed. The leaflets are wavy at the edge, with an ashy felt and hair below. The panicle is cylindrical throughout, the branches rigid and strongly ascending, weakly armed in the ultra-axillary part. The small petals and style are dark-red. The stamens are not so long as the style. The sepals rise when the petals fall. The stout-based pricklets are characteristic, also the unarmed panicle rachis and rigid ascending branches, with small deep-red flowers.

Rubus cinerosus, Rogers.—The habitat of this plant is woods, thickets, and open commons. The stem is very bluntly angled and round, with many very small pricklets, acicles, and bristles, the armature on stem and panicle being variable. The leaflets have broad, shallow, even teeth, with close ashy-felt and rather few hairs below, the terminal leaflet roundish, inversely egg-shaped. The panicle is broadly cylindrical, with widespreading branches. The rachis and flower-stalk have an ashy felt, are densely softly hairy, and have many very slender more or less widespreading prickles. The stalked glands are crowded and sunken, with a few gland-tipped bristles. The plant approaches *R. pulcherrimus*, differing in armature, glands, &c., and shape of panicle.

Rubus mucronatus, Bloxam.—The habitat of this plant is bushy places, hedges, heaths, and banks. The habit is arching, prostrate. The stem is nearly round. The prickles are very slender. The leaflets are thin, with simple, shallow teeth, rather thinly hairy below, the terminal rounded, inversely egg-shaped, with a short, abrupt, blunt point. The panicle is very loose below, forming a raceme above, with long, wide-spreading to erect flower-stalks, with rather few, very slender, turned-down prickles, and slender, unequal acicles, bristles, and stalked glands. The plant flowers in July and August, and is a deciduous shrub.

Rubus mucronatoides, Ley.—This Scottish plant is stouter than the last. The habit is low, arched. The stem is angled, with few hairs and acicles. The armature is stronger, and more unequal, both on the stem and rachis. The leaves are 3-5-lobed. The leaflets are large, with the terminal leaflet with a long narrow point, and partly lobed, coarsely toothed. The panicle is pyramidal, broad, straggling, and the rachis is wavy, with many unequal prickles. The large flowers are cup-shaped, the narrow petals rose colour, the stamens white, the sepals reflexed in flower and fruit.

Rubus Gelertii, Frider.—The habitat of this species is woods. The habit is arching, prostrate. The stem is stout. The prickles are long, nearly equal, confined to the angles. The leaflets are almost leathery, large, coarsely and irregularly toothed, the terminal one broadly oval, with a long narrow point and heart-shaped base. The panicle is strongly developed, very compound, with large broad leaves, with a round-topped, ultra-axillary part, with long, distant, strongly-ascending branches like the secondary panicle below. The rachis and flower-stalks have dense, grey felt, few or many acicles, and short-stalked glands. The sepals are reflexed in flower and fruit. The plant is intermediate between *R. pulcherrimus* and *R. anglosaxonicus*, but the leaflets are broader and not so parallel-sided as in the latter.

Rubus anglosaxonicus, Gelert.—The habitat of this species is bushy places and hedges. The stem is smooth, shining as if varnished, with numerous, scattered prickles. The prickles are strong. The leaves are 3-5-lobed, with 3 lobes radiating from a common centre and 2 laterals. The leaflets are thick, leathery, coarsely and irregularly toothed, with a grey felt below, the terminal leaflet long, narrow, oval, with nearly parallel sides, a short point, and notched base. The panicle is narrow above, with strongly ascending 1-3-flowered branches, the axillary leaves large.

Rubus melanoxyylon, Muell. & Wirtg.—The habitat of this species is moist bushy places and heaths. The stem and panicle rachis have a blackish-brown or dark-purple bloom. The armature is partly strong but very variable, some prickles being stout-based. The leaflets have close, even teeth, the terminal one narrowed to a short point, evenly toothed. The panicle is long, nearly cylindrical. The rachis has very unequal acicles,

bristles, and stalked glands, the largest prickles long, and strongly bent down. The plant resembles *R. mucronatus*, *R. villicaulis*, and *R. rosaceus*.

Rubus infestus, Weihe.—The habitat of this plant is thickets and hedges. The habit is high-arching, then bent down. The stem has mixed prickles, bent down, sickle-like, and hooked. The pricklets, acicles, and stalked glands on the faces are unequal, the prickles on the angles strong, nearly equal, long-pointed, very stout-based, sickle-like, and bent down. The leaflets are pale, often felted below, sharply and unevenly toothed, the terminal one egg-shaped, with a long point, the basal one very shortly stalked. The rachis is very strongly armed, the prickles more hooked, the smaller arms more glandular. The sepals are greyish-olive, with a white margin, wide-spreading or erect in fruit. The plant recalls the Suberect group.

Rubus uncinatus, P. J. Muell.—This plant is only found in woods. The armature is slender, both prickles and pricklets, which are bent down. The leaflets are thin, usually softly hairy, with a grey felt below, the terminal one nearly wedge-shaped, inversely egg-shaped. The stalks and midribs have slender, sickle-like, and hooked prickles. The panicle is very hairy, narrow, and cylindric. The rachis and flower-stalk are densely, softly hairy, with many nearly sunk stalked glands, and crowded acicular, sickle-like, hooked, and bent-down prickles. The sepals are narrow, and bent back. The plant resembles *R. infestus*.

Rubus Borreri, Bell Salt.—The habitat of this plant is hedges and commons. The habit is nearly prostrate. The stem is long, yellowish-brown. The prickles are very crowded. The pricklets, acicles, and stalked glands are most numerous below, the two last small. The leaflets are opaque above, yellowish-green, paler below, soft, with prominent ribs, with compound, finely-pointed, deeply-incised teeth, the terminal leaflet inversely egg-shaped, with a long narrow blunt point. The panicle is strongly developed, with a broad, round top, forming a corymb, with many unequal, sunk, nearly stalkless glands, and yellowish prickles. The plant is quite distinct from *R. Sprengelii*, and nearest *R. infestus*, distinguished by the prostrate stem, nearly equal prickles, terminal leaflet, broad panicle, and yellow tint.

Rubus Drejeri, G. Jensen.—The habitat of this plant is wood borders, thickets, and hedges. The stem is hairy, dull-brown. The leaves are 3-5-lobed, the same colour on both sides. The pricklets, acicles, and stalked glands are unequally scattered and of various lengths. The prickles are unequal. The leaflets are thin, with irregular, shallow teeth, shortly pointed, roundish, inversely egg-shaped, harsh beneath. The lateral leaflets of the 3-lobed leaves are enlarged. The panicle is long, narrow, loose. The rachis is wavy, with soft-haired felt. The prickles are various, chiefly bent down. The plant is allied to *R. melanoxyylon* and *R. podophyllus*.

Rubus radula, Weihe.—The habitat of this plant is rough bushy places, hedges, &c. The habit is high-arching, climbing, or prostrate. The stem is strong, angular. The prickles are rather few, very strong, all on the angles, about equal. The faces of the stem have a very short, nearly equal, mixed armature. The leaflets are finely, closely, greenish-felted below, not overlapping, the terminal leaflet broadly egg-shaped, with a long, narrow point. The panicle is showy, pyramidal, with strong prickles. The rachis has many, sunken, unequal, stalked glands, some small acicles, and strong, awl-shaped, rather straight prickles. The sepals are turned back. This species flowers in July and August, and is a deciduous shrub.

Rubus echinatus, Lindl.—The habitat of this species is thickets and hedges. The stem is furrowed and hairy. The numerous prickles are long and nearly equal. The leaflets are thick, lobed, deeply cut, with very compound, sharp-pointed teeth, and velvety ashy-felted below when young, greenish-grey with close felt when older. The panicle is long, narrow, cylindrical, leafy nearly to the top. The sepals have long points and are very strongly bent back. The fruit is long. The furrowed stem (hairy), unequal prickles, deeply-cut leaflets, narrow cylindrical leafy panicle distinguish the plant from *R. radula*; the dense hair on stem and rachis, deeply cut, thick, leaflets, narrow, less-branched panicle, stouter flower-stalks, larger flowers, from *R. rufus*.

Rubus rufus, Wh. & N.—The habitat of this plant is woods, thickets, and hedges. The habit is arching, prostrate, or climbing, furrowed above, and usually quite smooth, rough, with very short unequal-stalked glands and acicles. The prickles are numerous and short. The leaves are large, the leaflets when young with ashy and white felt below, coarsely and doubly toothed, the terminal leaflet roundish egg-shaped or oval, with a long, narrow point. The panicle is diffuse, broad, with crowded, often interlacing, many-flowered branches. The rachis is long, slender flower-stalk have very crowded stalkless glands. The leaflets are large and wedge-shaped. The flowers are rather small. The plant flowers in July and August, and is a deciduous shrub.

Rubus oigocladus, Muell. & Lef.—The habitat of this plant is woods and thickets. The stem is bluntly angled, dark bluish-green, thinly hairy. The leaflets are pale green, thinly hairy below, the terminal one inversely egg-shaped, with a blunt point, narrowed to the notched base. The panicle is narrow, very loose, with nearly erect, racemose branches forming a corymb. The rachis and flower-stalk have a white felt and dense short hair, nearly hiding the crowded nearly stalkless glands. The sepals are strongly bent back when the petals fall. The fruit is rather long.

Rubus regillus, Ley.—The habitat of this plant is woods and hedges. The habit is low-arching. The stem is bluntly angled, hairy, bluish-green, pale, very leafy, with numerous, short, unequal, bristles, and stalked glands rarely exceeding the hair. The leaves are mainly 3-5-lobed. The

leaflets are large, the terminal one oblong, with a long blunt point. The panicle is long, narrow, forming a raceme above, with short branches of 2-4 long, stalked flowers below. The close felt and widespread hairs obscure the numerous stalked glands and bristles. The sepals are bent back in flower and fruit. The plant resembles *R. oigocladus* or *R. podophyllus*, distinguished from the last by the yellowish-green colour, larger leaflets, blunt point, long, dense, widespread hairs on the rachis, bent-back sepals.

Rubus podophyllus, P. J. Muell.—The habitat of this plant is bushy places in slate quarries, &c. The habit is nearly prostrate. The stem is bluntly angled, dark, usually nearly smooth. The prickles are unequally scattered. The leaflets are convex, green, with a few widespread teeth. The terminal leaflet is bluntly and narrowly pointed, oval-oblong, with a rather short point. The panicle forms a raceme above. The rachis has close grey felt. The prickles are chiefly acicular, the acicles and stalked glands are weak and unequal. The plant resembles *R. mucronatus* and *R. melanoxylon* or *R. ericetorum*.

Rubus Griffithianus, Rogers.—This species occurs chiefly in hilly places. The stem and the prickles, which are unequal, are dark-red with appressed and widespread hairs. The prickles are large, unequal, almost confined to the angles. The leaflets have a white or ashy felt below, the terminal one roundish, inversely egg-shaped, with a long, narrow point. The panicle is rather narrow, loose, nearly cylindrical. The prickles, like those on the stem, are slender, widespread. The upper leaves are conspicuously white or ashy-felted. The sepals have a pale velvety felt. It is characterized by the unequal, bright-red prickles on stem and panicle, rachis, the white felt on the rachis, sepals, and under surface of the leaflets. The plant resembles *R. praeruptorum*.

Rubus praeruptorum, Boul.—The habitat of this species is hedges. It has an arching, prostrate stem, the prickles slightly swollen at the base, with unequal glands and acicles, the leaflets coarsely, unequally, and doubly toothed, softly hairy only on the veins below. The panicle is long, narrow, leafy, the rachis straight, prickles slender, bent down. The sepals are egg-shaped, aciculate, with long bristles. The plant flowers in July and August.

Rubus melanodermis, Focke.—The habitat of this species is bushy places and heaths. The habit is prostrate. The stem is nearly smooth, blackish-purple (hence *melanodermis*), with a few intermediate prickles on the faces. The large prickles are strong. The leaflets are plaited, green, the terminal leaflet inversely egg-shaped, blunt, with a long, blunt, narrow point. The panicle is narrow, cylindrical, with short, strongly-ascending lower branches, forming a raceme, and the upper branches are very short. The sepals are bent back in flower and fruit. It differs from *R. melanoxylon* in being less glandular, and in leaf and panicle; and from *R. Bloxamii* in the paler, more hairy stem, shorter prickles, more lobed leaflets, &c.

Rubus Babingtonii, Bell Salt.—The habitat of this plant is open woods, bushy places, and commons. The habit is arching, prostrate. The stem has many widespread, clustered, and single hairs. The stem is fuscous, and so are the unequal prickles. The large ones are numerous and fairly strong, with a slender yellow point. The leaflets are thick, softly hairy below. The terminal leaflet is rather broad, oblong, oval, with a fairly long, narrow, blunt point. The panicle is broad, usually very large, long, broadly cylindrical to blunt, with strong sickle-like prickles, and several simple leaves, the branches mostly equal, widespread. The rachis and flower-stalk have a dense, soft felt. The sepals are clothed externally with long yellowish-grey hair, rising as the fruit forms. The stamens are only just longer than the style. The plant is characterized by the soft hair on the stem and rachis, the thick, broad, soft leaflets, long, cylindrical, blunt panicle, with widespread branches. The plant flowers in July and August, and is a deciduous shrub.

Rubus Lejeunei, Wh. and N.—The habitat of this plant is woods and hedges. The habit is arching, prostrate. The prickles on the angles of the stem are slender. The leaves are 3-4-lobed. The leaflets are bright green, thin, hairy below, the terminal one inversely egg-shaped, and rhomboidal. The panicle is loosely pyramidal, forming a corymb, with slender, unequal armature. The rachis and flower-stalks have scattered, unequal, stalked glands, and a few gland-tipped bristles. The prickles are slender. The sepals are bent back, with close greenish-grey felt, and many protruding stalked glands and acicles. The plant flowers in July and August, and is a deciduous shrub.

Rubus ericetorum, Lefv.—The habitat of this plant is woods, thickets, and commons. This species is near the last, but is stronger armed and more glandular. The stem is strong and sharply angled, with stouter, longer prickles on the angles. The leaves are 5-lobed, the leaflets have a longer, narrow point, with grey felt below, and deeply cut teeth. The panicle is very long, pyramidal, forming a corymb, more prickly and glandular. The petals are narrow, white or pink. The rachis and flower-stalk are densely glandular and aciculate. The sepals have a soft cushion of grey felt hiding the purplish glands. The plant is distinguished from *R. Babingtonii* by the more unequal armature, thinner, inversely egg-shaped, grey-felted leaves, and pyramidal, loose panicle, with bent-back, fruiting sepals, long stamens, and short loose hair on rachis and flower-stalk.

Rubus cavatifolius, P. J. Muell.—The habitat of this plant is bushy places, hedges, and thickets. The stem is nearly smooth, and pale or reddish brown, like the unequal prickles. The leaflets are yellowish-green, the terminal one very broadly heart-shaped to egg-shaped, with a long narrow point. The panicle is nearly cylindrical, with slightly narrow, blunt top, the branches widespread, with many narrow, simple leaves. The plant is recognized by the pale-yellowish, heart-

shaped, egg-shaped terminal leaflet, with long point, and spreading branches. The plant flowers in July and August, and is a deciduous shrub.

Rubus mutabilis, Genev.—The habitat of this plant is bushy places. The habit is arching, prostrate. The prickles are large and numerous, often sickle-like. The leaflets are very long and narrow, deeply cut, with close white or grey felt below, the terminal one narrowed both ends, with very long, narrow point, inversely egg-shaped, the basal leaflet stalked, not overlapping. The panicle is strongly developed, very large, nearly cylindrical. The rachis and flower-stalks have crowded sunken glands, acicles, and long prickles. The sepals are bent back. The plant resembles *R. echinatus* and *R. pallidus*, Wh. and N. It flowers in July and August, and is a deciduous shrub.

Rubus Bloxamii, Lees.—The habitat of this plant is woods, bushy places, and heaths. The habit is arching, soon prostrate, the stem bluish-green, hairy. The larger prickles are rather weak, small, widespread, purplish-red. The terminal leaflet is broadly inversely egg-shaped, the leaflets convex, coarsely toothed, green, softly hairy both sides, wavy at the edge, the teeth lobed, deeply cut above. The panicle is long, leafy to the top, broadly pyramidal, round-topped, with long, ascending, distant lower branches. The rachis and flower-stalks are straight, stout, densely softly felted. The sepals are white-felted within, widespread, and star-like when the petals fall. The carpels are very small. The species flowers in July and August, and is a deciduous shrub.

Rubus fuscus, Wh. & N.—The habitat of this plant is woods and open places. The habit is arching, prostrate. The stem is densely hairy. The prickles are rather short, scattered. The leaflets have compound, irregular, coarse teeth, and are softly hairy below, the terminal one rather broad, with a long point. The panicle is narrow, nearly cylindrical, with nearly equal few-flowered branches, with sunken stalked glands and acicles. The plant flowers in July and August, and is a deciduous shrub.

Rubus pallidus, Wh. & N.—The habitat of this species is hilly woods, thickets, and hedges. The habit is arching, prostrate, the stem with prickles usually confined to the angles, with abundant, rather short, somewhat spreading hair. The leaflets are long and narrow, thin, often slightly felted, and soft beneath, coarsely and irregularly toothed, with a long narrow point. The panicle is loose, rather straggly, the upper leaves narrowly egg-shaped, with a long point or linear, the rachis wavy, the flower-stalk slender, the terminal one of the branches often longer than the lateral ones. The glands are stalked, black, and the acicles small. The sepals on the unripe fruit are turned back. The plant flowers in July and August, and is a deciduous shrub.

Rubus scaber, Wh. & N.—The habitat of this plant is open woods, bushy places, and damp hollows. The habit is arching, prostrate, the stem round, bluish-green, downy, the prickles small, strong, short, bent down, rough with small acicles,

with short-stalked glands and scale-like tubercles. The leaflets have fine teeth and a short point, and are wrinkled. The panicle is narrow, with short hair and short-stalked glands on the rachis and flower-stalks. The plant flowers in July and August, and is a deciduous shrub.

Rubus thyrssiger, Bab.—The habitat of this plant is bushy places and hedges. The habit is arching, prostrate. The stem has abundant, somewhat spreading, partly closely-pressed hairs. The leaflets are irregularly and coarsely toothed, the terminal one obtusely angled, inversely egg-shaped, nearly wedge-shaped at the base, which is entire. The panicle is loose and long, forming more or less of a raceme; the upper part long with 1-2-flowered branches, the flowers on long stalks, with aciculate prickles. The flowers are very showy. The plant is like *R. micans* and *R. oigocladius*, with more unequal prickles, and distinguished by the remarkably hairy stem and rachis, the long nearly naked panicle, numerous 1-2-flowered, long-stalked branches, and handsome flowers.

Rubus Lintoni, Focke.—The habitat of this plant is woods and heathy pastures. The habit is soon prostrate. The stem is nearly smooth. The prickles are rather few, very slender. The leaves are 3-lobed. The leaflets are shining, with close, fine-pointed teeth. The panicle is cylindrical, forming a corymb-like raceme, the rachis wavy, with unequal, partly sunk, stalked glands, and very slender bent-down prickles.

Rubus longithyrsiger, Bab.—The habitat of this plant is woods, damp, hilly, and shady places. The habit is prostrate. The prickles are short. The leaves are usually 3-lobed. The leaflets are more or less equal, nearly uniform, with shallow, even teeth, the terminal one inversely egg-shaped, with a blunt point. The panicle is pyramidal, forming a raceme above, the flower-stalk and rachis rigid, purple, with dense, short-stalked glands, with grey felt, and short hairs.

Rubus botryers, Focke.—The habitat of this plant is sunny spots. The stem is bluish-green, with scattered, unequal, numerous prickles and acicles. The leaves are frequently 4-5-lobed. The leaflets are blunt, with a short point, narrowed at the base. The panicle is less rigid, usually more compound and interrupted than in the last, with larger flowers, less rigid flower-stalk, and hairy carpels. The plant resembles *R. longithyrsiger* and *R. oigocladius*.

Rubus foliosus, Wh. & N.—The habitat of this plant is damp woods and bushy places. The habit is arching, prostrate, climbing, in thickets. The prickles are numerous, weak, and subequal. The leaves are mainly 3-lobed. The leaflets are nearly uniform, unequally toothed, paler and downy below, broadest near the middle, with an ashy felt below, the terminal broader near the middle, gradually narrow-pointed, narrowed to the entire or notched base. The panicle is long and narrow, with wavy rachis, with numerous short, few-flowered, tufted branches above, and several egg-shaped leaves with a long, narrow

point. The upper leaves have a white felt below. The sepals are egg-shaped, narrow, aciculate, with bristles. The plant flowers in July and August, and is a deciduous shrub, often covering the ground in a wood for long distances.

Rubus rosaceus, Wh. & N.—The habitat of this plant is cleared spots in woods, and wood borders, woods, and hedges. The habit is arching, prostrate. The large prickles are nearly equal, chiefly on the angles, strong but rather short, the short ones slightly exceeding the nearly equal aciculi, setæ, and hairs. The stem is round, downy or nearly smooth. The leaves are chiefly 3-lobed. The leaflets are broad, hairy on the nerves beneath, the lateral ones expanded. The terminal one is round. The panicle is broad and spreading, nearly pyramidal, blunt, very glandular and prickly. The petals are bright-pink, and the plant is a very handsome species. The plant flowers in July and August, and is a deciduous shrub.

Rubus horridicaulis, P. J. Muell. (= *R. saxicola*, P. J. Muell.).—The habitat of this species is woods and lanes. The stem is stout, blunt-angled, bluish-green, brown, smooth. The large prickles are unequal, scattered, sickle-like, or bent down. The leaves are 3-5-lobed, large, with uneven toothing, green, harsh below. The leaflets are equal, the terminal subrotund, with a blunt point. The panicle is broad, pyramidal, nearly cylindrical, the rachis is very prickly, with mixed armature, the sepals are triangular, clasping the hairy fruit. The petals are pink or white.

Rubus hostilis, Muell. & Wirtz.—The habitat of this species is woods, bushy, heathy ground. The habit is prostrate. The stem is bluntly angled. The leaves are 5-lobed. The leaflets are rather thin, narrow, with very long points, the terminal one with long, narrow point, with a narrow, entire, or notched base, with irregular partly-compound teeth. The panicle is short, forming a raceme or corymb above, loose, with all the branches ascending. The sepals are strongly turned back. The petals are small and narrow. The plant resembles *R. echinatus* in the strongly turned-back sepals, deeply-cut leaves, but differs in the armature and thin, narrow, green leaflets.

Rubus fuscocarpa, Weihe.—The habitat of this species is bushy places. The habit is nearly prostrate. The stem is stout and very hairy, dull purplish-brown. The prickles are very unequal, from a long, broad base. The leaves are moderate. The leaflets are thick, roundish, egg-shaped, with a fine point, with fine-pointed, compound, not deeply cut teeth, soft beneath, with grey-green felt and short hair. The armature is very strong. The petals are bright-red, the sepals in fruit erect or widespread. The plant is dark and shaggy, and intermediate between *R. pyramidalis* and *R. Marshallii* or *R. hystrix*.

Rubus Koehlerii, Wh. & N.—The habitat of this species is woods, thickets, bushy places, and hedges. The habit is arching, prostrate. The stem has crowded, unequal, scattered prickles, acicles, bristles, and stalked glands, even, the

longest bristles and acicles not unfrequently tipped with glands. The leaflets have uneven, rather coarse compound teeth, even above, hairy on the veins below, the basal leaflets not overlapping. The panicle is open, narrowed to the blunt top, rather loose. The rachis and flower-stalk have very crowded, widespread, long, slender prickles, acicles, bristles, and stalked glands. The fruiting sepals are turned back. It flowers in July and August, and is a deciduous shrub.

Rubus dasypyllus, Rogers.—The habitat of this species is woods, bushy places, hedges, especially in hilly districts. It differs from *R. Koehleri* in the densely hairy stem, with fewer intermediate prickles. The leaflets are thick, leathery, very softly hairy, and usually much paler beneath, the principal teeth, which are compound, being widespread or bent back. The panicle is long, very narrow, and interrupted. The petals are pink. The sepals are turned back in fruit.

Rubus pliniothystylus, Genov.—The habitat of this Rubus is woods. It has armature of the sub-Koehlerian group, nearer to *R. mutabilis* than *R. Koehleri*. The long leaflets are narrowed both ends, with a narrow, long point, and very pale beneath. The branches of the panicle bear many flowers, and the sepals are loosely turned back. The panicle is large, the fruit small.

Rubus Marshallii, Focke & Rogers.—The habitat of this species is bushy places and heaths. The plant is hairy. The stem is densely clothed with stout-based prickles and unequal acicles and stalked glands. The armature is dense, unequal, and widespread. The leaves are small, 3-5-lobed, with 3 lobes radiating from a common centre, 2 lateral. The leaflets have thick, soft hair below. The panicle is very elongate, ultra-axillary, narrowed almost to a point at the top, with long lower branches, like secondary panicles. The sepals are somewhat widespread when the fruit is young. The plant is intermediate between *R. Koehleri* and *R. fuscoater*.

Rubus viridis, Kalt.—The habitat of this species is woods and bushy places. The habit is prostrate. The stem is armed with numerous, unequal, acicular bristles, stalked glands, and slender, bent-down, large-based prickles and pricklets. The leaflets are softly hairy, and nearly smooth beneath, usually thin and brittle, with irregular, shallow teeth. The panicle has spreading, few-flowered, long-stalked branches, forming a raceme above. The stamens exceed the styles. The young carpels are downy. This species differs from *R. pallidus* in the more unequal armature, less compound panicle, and broader leaflets with less conspicuous, long points.

Rubus durotrigum, R. P. Murray.—The habitat of this species is woods and bushy ground. The habit is prostrate or climbing. The stem is clothed with dense prickles, acicles, and bristles. The prickles are very crowded, slender, with a long base. The leaves are large. The leaflets are very broad, shining, slightly hairy on the veins beneath, the terminal leaflet roundish, egg-shaped, with a long, gradually-narrowed point, with deeply-cut

or lobed teeth. The panicle is pyramidal. The stamens and style are nearly equal. The young carpels are thinly hairy.

Rubus divexiramus, P. J. Muell.—The habitat of this species is woods and heaths. The stem is slender, round, bluish-green, dark-purple. The leaves are mostly 3-lobed, with lateral leaflets deeply lobed or enlarged. The leaflets are yellowish-green, with fine, close, compound teeth, with short hair below, the terminal one obtuse-angled, inversely egg-shaped. The panicle is rather broad, rounded, with ultra-axillary top. The stamens are longer than the style. The young carpels are rather downy. The plant resembles *R. viridis*, *R. longithyrsiger*, and *R. infecundus*. The chief characters are the terminal leaflet, dark purple stem and rachis, rather broad, rounded panicle, and erect, fruiting sepals.

Rubus Bellardi, Wh. & N.—This species is found chiefly in moist woods. The habit is arching prostrate. The stem is round, with acicular prickles conical from a large base. The leaves are 3-lobed. The leaflets are nearly equal, rather evenly and finely toothed, the terminal one oval, the lateral ones very similar, with very short, spreading stalk. The panicle is short, forming a raceme above, with long, thin flower-stalk with crowded, unequal, red-stalked glands and acicles. The stamens and style are nearly equal. The sepals embrace the young fruit. The young carpels are smooth. The plant flowers in July and August, and is a deciduous shrub.

Rubus serpens, Weihe.—The habitat of this species is hilly woods. The stem is green, with short prickles. The leaves are 3-5-lobed. The leaflets are unequal, irregularly toothed, the terminal one with a long narrow point. The panicle is narrow, forming a raceme, with racemose branches below. The stamens hardly exceed the style. The young carpels are smooth. The plant is in flower in June and July, and is a deciduous shrub.

Rubus hirtus, Waldst. & Kit.—The habitat of this species is hilly woods. The habit is prostrate from a low base, rarely climbing, the stem densely covered with stalked glands, glandular bristles, and acicles. The prickles are straight, bristle-like. The leaves are principally 3-5-lobed, rarely 4-5-lobed. The leaflets are broad, coarsely toothed, very hairy on the veins below. The rachis is violet or red-brown, with stalked glands, and many long, glandular bristles. The stamens exceed the style. The carpels are hairy. The plant is densely glandular and bristly.

Rubus acutifrons, Ley.—The habitat of this species is woods and thickets. The prickles are rather stout, strongly bent down or hooked. The leaves are 3-5-lobed, the leaflets are opaque above, thinly hairy beneath, with fine lobed teeth, shining, the terminal one with a long narrow point. The panicle is very loose, and most of the flower-stalks are aggregated into a corymb, the ultra-axillary top forming a corymb. The stamens are much longer than the styles. The young carpels are hairy. The plant is intermediate between *R. viridis* and *R. Lintou*.

Rubus tereticaulis, P. J. Muell.—The habitat of this species is woods and heathland. The stem is densely hairy, with crowded, spreading hairs and acicles. The prickles are slender. The terminal leaflet is inversely egg-shaped, rather narrow, with a long narrow point. The rachis is rather wavy, and the flower-stalk spreading, densely felted and hairy, with crowded, unequal, sunken, black, stalked glands, the longer stalked glands and gland-tipped bristles few or none. The stamens are nearly equal to the style. The carpels are smooth. This species is intermediate between *R. foliosus* and *R. hirtus*, var. *rotundifolius*, differing in being more hairy than either and much smaller.

Rubus ochrodermis, Ley.—The habitat of this plant is woods and rough open ground. The stem is stout, rich yellow-brown, or dark-brown in exposed places. The plant is very prickly and nearly smooth. The prickles are crowded, short, passing into minute tubercles. The leaves are chiefly 3-lobed. The leaflets are nearly equal, the terminal one roundish, inversely egg-shaped, with a short narrow point. The panicle is long. The flower-stalk is strongly ascending. The sepals are turned back in flower and fruit. The stamens are longer than the style. This plant recalls *R. mucronatus* in the leaves and panicle, differing in armature and stem. It is intermediate between it and *R. foliosus*.

Rubus velutinus, Lefv.—The habitat of this plant is woods. The stem bears scattered silky hairs (hence the name *velutinus*). The prickles have a stout base. The leaves are 3-5-lobed, with 3 lobes radiating from a common centre, and 2 lateral. The leaflets have short, shining hairs below, and fairly even, scalloped, toothed margin. The terminal leaflet is roundish, inversely egg-shaped, with an enlarged lower side. The panicle is long and cylindrical. The calyx is less deeply cleft than usual, with greenish, narrow sepals clasping the fruit. The stamens exceed the style. The carpels are downy. The plant is intermediate between the *Bellardiani* and *Cæsii*, distinguished by the long sepals completely embracing the small fruit.

Rubus corylifolius, Gm. (sp. coll.)—The habitat of this plant is thickets, hedges, and commons. The habit is arching, prostrate. The stem is roundish, with few or no stalked glands and acicles. The prickles are awl-like, nearly equal, irregularly scattered. The leaflets are fairly thick, with felt below, the terminal one with a fairly long stalk. The panicle is rather irregular, with few axillary branches, and white felted rachis. The flower-stalk and sepals are also felted. The ordinary stalked glands and acicles are few or absent. The fruiting sepals are turned back in fruit, egg-shaped, with a long narrow point, erect or turned back. The petals are round to egg-shaped. The plant flowers in June till August. It is a shrub.

Rubus Balfourianus, Blox.—The habitat of this plant is thickets and hedges. The habit is arching, prostrate. The stem has many fine, silky hairs. The stalked glands are short, fairly numerous, unequally scattered. The leaflets are thin, hairy

below, wrinkled above, large. The stipules are rather large. The panicle is spreading, loose, with a wavy rachis, with unequal, scattered, short, stalked glands, the branches few-flowered and straggling. The flowers are usually large, and so is the fruit. The sepals are narrow, erect in fruit, or widespread. The stamens are short, or equal to the flesh-coloured style. The fruit is handsome, inversely egg-shaped. The plant flowers in July and August. The plant is a shrub.

Rubus Bucknallii, J. W. White.—This species grows luxuriantly in open glades and on the outskirts of aboriginal woodland, at an elevation of over 600 ft. on oolitic hills. The habit is arching, prostrate. The stem is greyish, densely hairy, the silky hairs curved and wavy, with resinous exudation in the young state. The prickles are numerous, scattered, nearly equal, straight, slender, bent down or widespread. The leaves are made up of 5 leaflets. The leaflets are thick, dull-green, hairy both sides, toothed or lobed, broad, overlapping, heart-shaped below, the terminal one broadly heart-shaped, or egg-shaped, with a long narrow point. The leaf-stalks and midribs are armed with hooked prickles and stalkless minute glands. The stipules are linear, hairy, bristly. The panicle is long, narrow, leafy, with a close, blunt top, and distant, ascending, axillary branches, shorter than the leaves. The rachis and flower-stalks are armed with slender prickles, densely hairy, with scattered, stalked glands on upper part. The sepals are egg-shaped, narrow, glandular, bent back in fruit. The petals are broad and oval, touching, white. The anther-stalks are white, and exceed the green styles. This bramble is distinguished from *R. Balfourianus* by the angular, densely hairy and prickly stem, absence of acicles and stalked glands, the long, narrow, close-topped panicle, and white corolla.

Dewberry (*Rubus cæsius*, L.)—The habitat of the Dewberry is thickets, hedges, damp places. The habit is prostrate. The stem is round, bluish-white. The prickles are weak, short, and awl-like. There are few or no stalked glands and acicles. The leaves are 3-lobed. The leaflets are thin, irregularly cut, and lobed. The stipules are usually very wide in the middle, tapering at both ends. The panicle is loose, with few flowers. The fruiting sepals are clasping, with long points. The drupelets are few, large, bluish-white, and acid. The plant is weak and slender. It flowers in June and July, and is a shrub.

Stone Bramble (*Rubus saxatilis*, L.)—The habitat of the Stone Bramble is moist woods and rocky thickets, stony mountains. The stem is herbaceous, rooting at the tip, annual. There are few, weak, and scattered, or no prickles, but the plant is hairy, very slender. The leaf is made up of 3 leaflets. The barren stem is whip-like, the flowering stem short, erect, simple, or branched, with acicles, and egg-shaped stipules. The terminal shoots form a corymb, with few flowers. The flowers are small. The petals are lance-shaped, erect, white, equalling the sepals. The

stamens are longer than the styles. The flowering shoots are radical. The drupelets, 1-6, are large and deep-red. The plant flowers in July and August, and is a herbaceous perennial.

Avens (*Geum urbanum*, L.).—The habitat of this plant is thickets, borders of copses, hedges, and hedgebanks. The habit is that of a rosette plant. The radical leaves are long-stalked, with lobes each side of a common stalk, the terminal leaflet large, rounded, scalloped, lobed, the lateral ones stalkless, oblong. The stem-leaves are made up of 3 leaflets, variable. The stipules are large, lobed, and cut. The flowers are small, erect, yellow. The petals are spreading, inversely egg-shaped, and the flower-stalk is slender. The achenes form a head which is not stalked, the upper joint of the awn being short and smooth. The achenes are roughly hairy and spreading. The receptacle is roughly hairy. It is 1-3 ft. high, and flowers from June to August, being a herbaceous perennial.

Water Avens (*Geum rivale*, L.).—The habitat of this plant is damp woods. The habit is that of a rosette plant. The lower part of the stem is clothed with bent-back hairs, and it is very downy above. The radical and stem-leaves are as in the last, with more numerous segments, the lateral larger. The stipules are egg-shaped, small, toothed. The flowers are drooping, purplish-brown, with darker veins, larger than the last, the petals are notched, broadly inversely egg-shaped or heart-shaped, the claw wedge-shaped. The purple calyx lobes are reddish-brown, downy, with a long, narrow point. In fruit it is erect, the lobes closely pressed. The stalk of the ovary is long. The lower joint of the style equals the long, hairy, upper joint, the point smooth. The achenes form a head which is stalked. The plant is 1 ft. or more in height. It flowers in June and July, and is a herbaceous perennial.

Geum intermedium, Ehrh. = *rivale* × *urbanum*.—The habitat of this cross is damp woods. The habit is the rosette habit. The leaves are as in the last two. The stipules are round, toothed. The flowers are erect or drooping, larger than in *Geum urbanum*. The flowers are paler and more yellow than in Water Avens. The purple calyx is intermediate, not turned back in fruit, but wide-spreading. The stalk of the ovary is short, or it is stalkless. The lower joint of the style is longer than the upper, which is hairy, with long, smooth point. It is 1-2 ft. high. The fruit is stalkless. The plant flowers in June and July, and is a herbaceous perennial.

Downy Rose (*Rosa villosa*, L.).—The habitat of this rose is thickets and hedges. The habit is that of an erect shrub, with straight then arching branches. It is a large bush. The prickles are uniform, slender, and nearly straight, and serve as a protection. The leaflets are acute, with usually doubly-toothed margin, with few or no glands, softly downy. The flowers are deep rose colour on short flower-stalks. The erect sepals, lance-shaped, convex at the back in fruit, are quite persistent, and densely glandular, slightly

pinnate. They are unequal, due to their arrangement in the bud. The corolla is fringed with hairs and glandular. There is no disk. The fruit is round, densely prickly or naked, bright-red, ripe in August. Downy Rose is 3-6 ft., and flowers in June and July. It is a deciduous shrub.

Downy Rose (*Rosa omissa*, Desegl.).—The habitat of this species is thickets. The mature thorns are straight, rarely or slightly curved. The stem is tall, prickly, nearly straight. The leaflets are egg-shaped, elliptic, with numerous glands, hairy. The sepals are persistent till the fruit is ripe, glandular, egg-shaped, lance-shaped, sub-erect in fruit, the flower-stalk short, variable in length, with large bracts. The plant is 3-6 ft. high, flowering in June and July, and is a deciduous shrub.

Rosa agrestis, Savi. = *R. sepium*, Thuill.—The habitat of this plant is thickets, chalk downs, &c. The stem is sub-erect, with long, loose branches. The prickles are unequal, hooked, with a few aciculi and glandular hairs. The leaflets are small, narrowed both ends, very glandular below, hairless or hairy on the veins below, doubly-toothed. The flowers are 1-3, pink. The sepals are nearly persistent, closely pinnate. The flower-stalk is naked. The styles are hairy, downy. The early fruit is egg-shaped or nearly rounded, naked. The disk is moderate. The plant is 3-6 ft. high, flowering in June and July, and is a deciduous shrub.

Evergreen Rose (*Rosa sempervirens*, L.).—This rose is commonly found in plantations and is an escape from cultivation. The plant is evergreen, shining, the branches are long, prostrate, the leaflets on the flowering branches are only 5. The sepals are shining, glandular on the back. The column of the styles is hairy. The plant is 3-4 ft. high, flowering in June and July, and is an evergreen shrub.

Pyrus latifolia, Syme.—The habitat of this plant is copses and borders of forests, hilly woods. This and other species were formerly considered subspecies of *Pyrus Aria* (see Volume III, Section V). The habit is the tree habit, as in the latter. The leaves of the flowering shoots are elliptical, with 5-9 lateral veins on each side, less prominent below, egg-shaped, acute or oblong, lobed, the lobes often acute, triangular, deepest near the middle, toothed, with a long narrow point. The under side of the leaves is grey-felted, and flocculent with tufts of wool. The white flowers are in a corymb. The fruit is red or darkish-brown. The plant is considered a hybrid between *P. Aria* and *P. terminalis*. It is a tall tree, flowering in May and June, and is deciduous.

Pyrus intermedia, Ehrh.—The habitat of this plant is woods. The plant has the tree habit, and the leaves are oblong, doubly-toothed near the tip, deeply divided nearly to the base below, the lobes oblong, lance-shaped, toothed, the lobes more united toward the extremity of the leaf, which is only deeply doubly-toothed, hence the name *intermedia*. The under side is white and downy. The white flowers are in a corymb. The anthers

BRITISH FLORA

are pink, the stamens long. The fruit is scarlet. The plant is tall, flowering in May and June, and is a deciduous tree.

Pyrus scandica, E. & H., non Aschers.—This species is only found in two vice-counties. Mr. Druce in his Oxford list unites *P. scandica*, Aschers, with *P. intermedia*, Ehrh. The late Rev. A. Ley regards the Arran plant with broader leaves and larger fruit, from the west of England, as distinct from the Arran plant (*P. scandica*, Syme, *Sorbus scandica*, Fries) and *P. scandica*, Aschers. This name is retained in the last 10th edition (1908) of the London Catalogue. The *P. scandica*, E. & H., Mr. Druce places as a variety of *P. intermedia*, Ehrh. It differs from the latter as defined by Mr. Druce in the leaves being less narrowed, almost rounded at the base, deeply lobed, with numerous sharp teeth, and 6-8 pairs of leaves. The fruit is large.

Pyrus semipinnata, Roth.—This plant is found in seven vice-counties, but is as a whole doubtful. The plant resembles *P. fennica*, Bab. = *P. pinnatifida*, Ehrh., having oblong, lance-shaped leaves, bluntly lobed, pinnate below. The habitat is shrubberies.

Pyrus cordata, Desv. = *Briggssii*, Syme.—The habitat of this plant is woods and hedges. The plant has the tree habit. The leaves are heart-shaped, egg-shaped, with a round base, nearly hairless. The flowers are white. The fruit is very small, pear-shaped or rounded. The plant is 10-22 ft. in height, and flowers from April to June, being a small deciduous tree.

Wild Pear (*Pyrus communis*, L.).—The habitat of this plant is woods, thickets, and hedges. It has the tree habit. The branches bear spines, and are pendulous. The leaves are in groups on the last year's wood. They are alternate, elliptic, oblong, egg-shaped, toothed, sometimes inversely egg-shaped, and narrowed to an acute point, downy below, and lobed when young, then smooth. The leaf-stalk is slender. The flowers are white, in a simple cyme or corymb, the style is distinct, the ovary woolly, the fruit long, pear-shaped, the base inversely conical. The plant is 20-40 ft. in height, flowering from April to May, and is a deciduous shrub or small tree.

Wild Service (*Pyrus terminalis*, Ehrh.).—The habitat of this plant is woods, hedges, in the south especially. The Wild Service has the tree habit. The branches and young leaves are downy below. The leaves are egg-shaped, heart-shaped, oblong, 6-10-lobed, smooth, the lobes triangular, toothed, the lower lobes larger and spreading, with a long narrow point. The numerous flowers in compound corymbose cymes are white. There are two carpels. The fruit is oval, pear-shaped or nearly round, and greenish-brown, 2-celled, spotted or dotted, acid. The plant is a small tree, 10-30 ft., flowering in April and May, and is a deciduous tree, attaining a large girth when full-grown.

Medlar (*Pyrus germanica*, Hook., fil.).—The habitat of this plant is thickets and hedges. The Medlar has the tree habit. The stem is much-branched, bearing spines when wild. The leaves

are lance-shaped, simple, entire, downy below, inversely egg-shaped or oblong, rarely simply or doubly toothed. The flowers are white, on short flower-stalks, solitary. The calyx is downy, the persistent lobes having enlarged, leafy tips. There are 5 styles. The fruit is rounded, large, with a bony endocarp, 5-celled, the cells seeded, with a large flattened area at the top. The plant is a fairly tall tree, flowering in May and June, and is deciduous.

ORDER RIBESIACEÆ

Gooseberry (*Ribes Grossularia*, L.).—The habitat of this plant is copses. The habit is of the bush or shrub type. The plant is spreading, the stem and branches prickly, with 1-3 thorns at the base of the branches. The leaves are plaited in the bud. They are rounded, 3-5-lobed, the margin cut, scalloped, smooth or hairy, grouped on short, lateral branches. The flowers are green, drooping, the flower-stalk short, downy, 3-flowered, having 2 bracts below. The calyx is bell-shaped, with turned-back, purplish sepals, which are inversely egg-shaped, and round petals, erect, and small. The fruit in the wild form is smooth, stiffly hairy in the cultivated one. The plant is 2-4 ft. in height, and flowers in April and May, being a deciduous shrub.

Alpine Currant (*Ribes alpinum*, L.).—The habitat of the plant is woods in the N.E. The branches do not bear spines. The leaves are smooth or with a few hairs, with 3 acute, deeply-toothed lobes, shining below, egg-shaped, the leaf-stalk slender. The plant is dioecious. The flowers are in erect, glandular, hairy racemes, the larger male flowers in a dense raceme, 20-30 flowers, the female short, 8-10, the flowers yellow, the female greener. The bracts are linear, and longer than the flower-stalks, lance-shaped. The petals are shorter than the sepals, the calyx smooth, and the limb flat. The berry is round, scarlet, insipid. The styles are short and cleft. The plant is 2-4 ft. in height, flowering in April and May, and is a deciduous shrub.

Red Currant (*Ribes rubrum*, L.).—The habitat of this plant is woods, thickets, brushwood, stream sides, &c. The habit is the bush or shrub habit. The leaves are 3-5-angled, blunt, smooth, the leaf-base heart-shaped, the lobes triangular, scalloped, the leaf-stalk downy or bristly. The flowers are in smooth, glandular racemes, drooping in fruit, with egg-shaped bracts less than the flower-stalks. The calyx is smooth, with a flat limb. The greenish-yellow flowers are numerous. The petals are small. The fruit is red and acid. The plant is 3-5 ft. in height, flowering in April and May, and is a deciduous shrub.

Black Currant (*Ribes nigrum*, L.).—The habitat of this plant is woods, thickets, damp swampy places. The habit is the shrub habit. The stem is not spinous. The leaves are odorous, glandular, dotted below, angled, 5-7-lobed, the lobes acute, triangular, toothed. The leaf-stalk is slender, downy. The flowers are yellowish-green, in droop-

ing racemes, loose, woolly, without glands, a separate flower-stalk for each, the bracts awl-like, not so long. The calyx is downy, bell-shaped, glandular. The petals are small. The berry is large, round, black. The plant is 3-5 ft. in height, flowering in April and May, and is a deciduous shrub.

ORDER CRASSULACEÆ

Orpine (*Sedum Fabaria*, Koch = *purpureum*, L.).—The habitat of this plant is copses, stony hedgebanks, and thickets. The habit is the rosette habit. The fleshy leaves check transpiration, and the succulent tissue is adapted to drought. The leaves are wedge-shaped at the base, and the stalks are very short. The leaves are toothed, oblong, lance-shaped. The plant is more slender than *S. Telephium* (see Volume V, Section XII). The flowers are purple, in a dense corymb, the petals are spreading. The carpels are not furrowed. The plant is 6-24 in. in height. It flowers in August, and is a herbaceous perennial.

ORDER ONAGRACEÆ

Rose Willow Herb (*Epilobium roseum*, Schreb.).—The habitat of the plant is copses, wet or moist places, brook sides. The habit is erect. The stem is much-branched, brittle, with autumnal stolons, with loosely rosulate leaves in a rosette. The stem is smooth when young, with woolly hairs later, and small, spreading, jointed hairs above. The stems are square-stalked, with 2-4 raised lines, and the wings give strength and conduct moisture. The leaves are long-stalked, alternate, egg-shaped, oblong, narrow above and below, smooth, toothed. The veins are prominent, The buds are nodding, with a narrow, long point. The flowers are numerous, rose-coloured. The calyx has lance-shaped sepals with a long, narrow point. The capsule is downy. The stigma is entire or slightly lobed. The seeds are inversely egg-shaped, oblong, the base rounded. The plant is 9-24 in. high, and flowers in July and August, being a herbaceous perennial.

Alpine Enchanter's Nightshade (*Circeea alpina*, L.).—The habitat of the plant is woods and thickets in hilly districts, shady places. The habit is erect. The plant is smaller and less hairy than the common Enchanter's Nightshade. The plant is usually hairless. The leaves are opposite, shining, deeply toothed, heart-shaped, with a long, narrow point, the margin wavy, toothed. The leaf-stalks are longer and winged, flat, the wings membranous. The bracteoles are bristle-like. The flowers are pinkish-white. The petals are divided nearly to the base, shorter than the membranous sepals, with oblong lobes, narrow below, the calyx hairless. The fruit soon falls. The ovary is 1-celled. The plant is 6-18 in. in height, flowering in July and August, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

Astrantia (*Astrantia major*, L.).—The habitat of the plant is woods in hilly districts. The habit

is the rosette habit. The radical leaves are 5-7-divided, palmate, the lobes egg-shaped, lance-shaped, toothed, the teeth bristle-pointed. The leaf-stalk is long. The flowers are pinkish-white. The involucle equals the umbel, and is silvery or straw-coloured, the bracts egg-shaped, lance-shaped, netted, white below, dark-green, tinged with pink, toothed. The flower-stalks are thread-like. The calyx teeth are longer than the petals and egg-shaped, lance-shaped, narrowed to an acute point. The fruit is egg-shaped, the carpels flattened, ribbed, furrowed. The styles are spreading. The plant is 1-2 ft. in height, and flowers in June and July, being a herbaceous perennial.

Bladder Seed (*Danaca (Physospermum) cornubiense*, Burnat).—The habitat of this plant is thickets, oak coppices. The habit is the rosette habit. The stem is smooth, erect, round, furrowed, with panicle branches, the radical leaves on long stalks, flat, 2-3 ternate, the segments wedge-shaped, deeply divided into narrow lobes, long-stalked. The stem-leaves are in threes, lance-shaped, entire. The flowers are white. The umbels are on long stalks with rays of 10-20, nearly erect, furrowed, terminal, and axillary. The fruit is bladdery, in pairs. The carpels are not so broad as long, furrowed, the seeds loose. The plant is 1-3 ft. high. It flowers in July and August, and is a herbaceous perennial.

Milk Parsley (*Selinum Carvifolia*, L.).—The habitat of this plant is moist copses and marshes. The plant has the pyramidal habit like *Daucus Carota*. The stem is angular, furrowed, with winged ridges, nearly smooth. The leaves are thrice pinnate. The leaflets are egg-shaped, the lower deeply divided to the base, the segments lance-shaped, linear, with a blunt point, toothed, or entire, with thickened margins. The leaf-stalk is long and slender. The flowers are white in flat-topped umbels, of 10-20 rough rays, the few bracts awl-like, the partial bracts or bracteoles numerous. The styles are slender and bent back. The fruit has the lateral ridges winged and spreading. The plant is 1-3 ft. in height. It is in flower in July and August, and is a herbaceous perennial.

ORDER CAPRIFOLIACEÆ

Guilder Rose (*Viburnum Opulus*, L.).—The habitat of this plant is wet woods, copses, thickets, and hedges. The habit is the tree or shrub habit. The branches are square when young, slender. The buds are scaly. The leaves are delicate, smooth above, downy below, protected by the lower leaves in bud, which are leathery and folded up in bud, so that they are lobed, with linear glandular stipules at the base. The leaf-stalks bear honey-secreting hollows, attractive to wasps, which prevent the leaves being eaten by larvæ. The plant has a peculiar odour in the evening. The leaves are 3-5 lobed, with a long narrow point, the lobes toothed, unequal. The flowers are white in a large rounded cyme with linear bracts,

BRITISH FLORA

the inner small, fertile, the outer larger neuter, forming a ray. The corolla is wheel-shaped, i.e. the outer flowers, inner bell-shaped, creamy white. The berries are scarlet, rarely (Leicestershire, Derbyshire) orange. The seeds are keeled, flattened. The plant is 6-8 ft. in height, flowering in June and July, and is a deciduous tree or shrub.

Perfoliate Honeysuckle (*Lonicera Caprifolium*, L.).—The habitat of the plant is woods, copses, borders of woods, hedges in woods, lanes, and in open fields. The habit is climbing or twining, The upper leaves are oblong, united below round the stem, forming a cup in which water collects, serving to prevent insects from climbing up. They are bluish-green below, the lower are stalked, smooth both sides, and distinct, broadly egg-shaped, oblong. The bracts are leafy, large, connected; the flower-heads terminal, stalkless, with a gaping corolla, the tube long. The flowers are white or purple, whorled. The calyx-limb is short, and persists. The style is smooth. The berries are round and scarlet. The pericarp and placenta are fleshy. The plant is a climber, flowering in May and June, and is deciduous shrub.

Fly Honeysuckle (*Lonicera Xystochlora*, L.).—The habitat of the plant is copses. The habit is climbing. The plant is downy. The stem is erect, or nearly so. The leaves are stalked, egg-shaped or inversely so, downy. The flowers are axillary, in pairs, short, pale yellow, on 2 flower-stalks, which are downy, as long as the flowers, shorter than the leaves. The limb of the calyx falls at length. There are 2 linear, downy bracts, and minute bracteoles. The ovaries are connected at the base. The anther-stalks are downy. The berries are small, scarlet or crimson. The plant is a climber, flowering in May and June, and is a deciduous shrub.

Linnæa (*Linnæa borealis*, L.).—The habitat of this plant is fir forests and plantations, and heathy woods. The habit is trailing or creeping. The plant is without hairs, except the inflorescence, which is glandular. The stems are slender, thread-like. The leaves are opposite, in distant pairs, broadly egg-shaped, blunt, scalloped, stalked, dark-green above, paler below, leathery. The flowers are pink, sweet-scented, on erect, thread-like, 2-flowered flower-stalks, with 2 bracts above, and are drooping, purple within. The flower-stalks arise from short lateral branches, with 2-4 leaves. The fruit, which is rare, is small, black when ripe. The plant is a trailer, 3-8 in. long, flowering in July, and is an evergreen shrub.

ORDER RUBIACEÆ

Madder (*Rubia peregrina*, L.).—The habitat of this species is copses and rocks, chiefly near the sea, stony places in S. and W. England. The habit is erect or spreading. The plant is smooth, shining, except for the recurved prickles on the stem angles, midrib, and leaf margins. The old stem is round, the shoots square, spreading. The leaves are in whorls of 4-6, elliptic, oblong, lance-shaped, smooth above, nerveless, the margin and keel

having turned-back bristles, rigid, and evergreen. The flowers are in axillary or terminal, panicled cymes, longer than the leaves, greenish-yellow. The lobes of the 5-cleft, wheel-shaped corolla are spreading, oval, narrowed to a fine point. The stamens are short, the 2 styles united below, the stigmas pinheaded. The fruit is black, small, rounded. Madder is 1-2 ft. high. The flowers appear from June to August. The plant is a herbaceous perennial.

Asperula taurina, L.—This plant is an alien found in shrubberies. The habit is erect. The leaves are 4 in a whorl, elliptic, with a long, narrow point, 3-veined. The flowers are pinkish-white in a corymb, the tube of the corolla very long, the fruit rather rough. The plant is 6-28 in. in height, and flowers in May and June, being a herbaceous perennial.

ORDER COMPOSITÆ.

Elecampane (*Inula Helenium*, L.).—The habitat of the plant is copses, and meadows, or moist pastures. In Scotland it is found naturalized about old houses and castles. There is a large, succulent rootstock. The habit is erect. The stem is tall, stout, branched above, round, furrowed, solid, with many large leaves which are smooth above, velvety below. The radical leaves are long-stalked, oblong, lance-shaped. The stem-leaves are stalkless, toothed, heart-shaped or egg-shaped, auricled, acute. The flowerheads are large, the flower-stalk long, stout, and naked, terminal, solitary, or few. The florets are bright yellow, the ray florets ligulate. The ligules are long and slender. The bracts are leafy, the inner inversely egg-shaped, the outer broadly egg-shaped, turned back, velvety. The smooth fruit is 4-angled, the pappus pale red. Elecampane grows to a height of 3-4 ft., and flowers in July and August. The plant is a herbaceous perennial.

Wood Cudweed (*Gnaphalium sylvaticum*, L.).—The habitat of the plant is woods, copses, alpine places, pastures, and heaths. The plant has a woody rootstock. The habit is erect. The stem is simple, the leaves are woolly below, linear, lance-shaped, or inversely egg-shaped, acute, the stem-leaves narrower, acute, 1-nerved. The leaf-stalk is not half-clasping. The flowerheads are cylindrical in a long, leafy raceme or spike, or axillary or terminal. The florets are dark brown, the involucral bracts unequal, yellow or reddish brown, blunt, the outer ones cottony. The fruit is downy, the pappus white or brown. The wood cudweed is 3-24 in. in height, flowering from July up till September, and is a herbaceous perennial.

Leopard's Bane (*Doronicum Pardalianches*, L.).—The habitat of the plant is plantations, damp, hilly woods, and pastures. The rootstock is creeping and bears stolons. The habit is erect, solitary, the stem hollow, hairy or smooth, glandular above. The radical leaves are stalked, egg-shaped to heart-shaped, rounded at the tip. The lower stem-leaves clasp the stalk, the upper are stalkless and clasping. The leaves are hairy, with fine teeth, soft, blunt, those above acute. The 3-5 flowerheads

are numerous, large, the florets yellow (both disk and ray). The earlier heads are shorter than the later ones. The flowerheads are on long stalks. The involucral bracts are long, awl-like, lance-shaped, glandular. The receptacle is downy. The fruit is oblong, black, ribbed, that of the ray florets smooth, with no pappus, that of the disk florets hairy with white pappus. The plant is 2-3 ft. in height, flowering from May to July, and is a herbaceous perennial.

Plantain-leaved Leopard's Bane (*Doronicum plantagineum*, L.).—The habitat of this plant is plantations, where it is naturalized, and damp places. The habit is as in the last, but it is smooth and slender. The crown of the root is woolly. The radical leaves are long-stalked, egg-shaped, narrower, narrowed into the leaf-stalk, the stem-leaves stalkless, clasping with a winged stalk, the upper oblong, tapered to a long point, and toothed, 3-5 ribbed. The flowerhead is solitary, or, when one or more, the lateral are not longer than the central ones. The bracts are awl-like. The fruit of the ray is smooth. The plant is 2-3 ft. in height, and flowers from May to July, being a herbaceous perennial.

Burdock (*Arcium nemorosum*, auct. angl. = *A. Newbouldii*, Williams).—The habitat of the plant is woods. The leaves are convolute, heart-shaped, oblong to ovate, on hollow stalks, angular, nearly flat above. The flowerheads are purple, racemose, hardly stalked, round, ovate, contracted at the mouth in fruit, slightly webbed, in threes, close, at the end of branches, when young ovate, prolonged, not umbilicate. The phyllaries are ascending, and equal or exceed the florets, being awl-like, the inner row lance-shaped, shorter. The upper part of the florets is more or less cylindrical, as long as the lower part. The plant is 2-4 ft. high, flowering in August, and is a biennial.

Scabious-leaved Hawkweed (*Crepis hieracoides*, Waldst. & Kit. = *H. mollis*, Aschers.).—The habitat of this plant is woods in the north, mountain woods, and shady places. The habit is the rosette habit. The plant is erect, the stem purple below, slender, hairy or smooth. The lower leaves are oblong, spoon-shaped, narrowed into a foot-stalk, the upper stalkless, half-clasping, linear, oblong. The flowerheads are few, the florets yellow, in a corymb, the flower-stalk glandular, hairy. The involucral bracts are tipped with glands, lance-shaped, narrow, the involucre nearly cylindrical, the outer bracts close, short, as long as the pappus. The fruit is smooth, striate, with many ribs, narrowed above and below, as long as the white silky pappus. The plant is 2-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Marsh Hawksbeard (*Crepis paludosa*, Moench).—The habitat of this plant is moist mountain meadows, moist grassy ground, shady places, woods, and copses. The habit is erect, the stem being smooth, unbranched, angular, with many leaves, the radical ones egg-shaped, oblong, tapered, lance-shaped, the stem-leaves oval, large, heart-shaped, clasping, the leaf-stalks slender.

The flowers are yellow, the involucral bracts glandular, with black hairs. The fruit is cylindrical, not beaked, the pappus stiff, brittle, dirty white or brown, 10-ribbed. The plant is 2 ft. in height and is in flower between July and September, being a herbaceous perennial.

Orange Hawkweed (*Hieracium aurantiacum*, L.).—The habitat of this plant is woods, pastures, waste places, where it is naturalized, railway banks, copses, in the N. of England and Scotland. The habit is the semi-rosette habit. The root-stock is creeping, with short or no stolons. The stem is leafy, slightly hairy, bristly, and woolly above. The leaves are green, egg-shaped, lance-shaped, hairy both sides, not cottony below. The flowerheads form a corymb. The florets are orange. The involucral bracts are blunt, the ligules orange. The styles are brown. The plant is 9-15 inches in height, flowering in June and July, and is a herbaceous perennial.

Hieracium pinnatifidum, Linnr.—The habitat of this plant is woods. The stem is tall, wavy, purplish, stiffly hairy below and above, downy above. The radical leaves are 3-4, the outer soon fading, oval, toothed or nearly entire, the inner oval to oblong, lance-shaped, the innermost acute, shortly toothed. The stem-leaves are distant, the lower large, egg-shaped to lance-shaped, long-pointed, deeply divided nearly to the base, toothed below, with irregular lobes, stiffly hairy, stellately downy. The panicle is simple, the lower branches distant, the upper close, longer than the acodium. The flower-stalks are woolly-felted, hairy, glandular. The involucre is slender, rounded below. The phyllaries are linear to lance-shaped, the inner with a green border, with long, naked, points, woolly-felted at the base, glandular, sparsely hairy. The styles are yellowish or dingy.

Hieracium tridentatum, Fr., *pro parte*.—The habitat of this plant is hedgebanks and borders of woods. The stem is purplish, stiffly hairy, woolly-felted, nearly smooth above. The lowest leaves form a rosette or are close, and the outer are oblong, lance-shaped, acute, toothed. The lower stem-leaves are shortly stalked, lance-shaped, toothed, woolly-felted, stiffly hairy below, fringed with hairs on the border. The panicle is a compound corymb, the branches racemose, slender, erect to spreading, the upper close to spreading. The flower-stalks are arching, stiffly hairy, glandular. The heads are small, dark green, egg-shaped below. The phyllaries are dark green, linear, triangular to lance-shaped, the inner narrow, pale-tipped, woolly-felted, senescent, glandular, hairy. The styles are yellow to brown. The plant is 1-2½ ft. high, flowering from July to September, and is a herbaceous perennial.

Savoy Hawkweed (*Hieracium boreale*, L.).—The habitat of this plant is copses, hedgebanks, banks, and heaths. The plant has the erect habit. The stem is very hairy, often reddish, downy above, leafy. The leaves are broad at the base, egg-shaped, lance-shaped, toothed, the lower stalked, the upper broader, stalkless, scarcely

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clasping, falsely 3-veined, the lower narrowed below, hardly stalked. The heads form a corymb, or panicle, leafy. The flower-stalks are cottony, the involucle egg-shaped below, dark, nearly smooth, with close, broad, blunt bracts. The ligules are smooth. The style is blackish livid. The plant is 2-4 ft. in height, and flowers in August and September, being a herbaceous perennial.

Narrow-leaved Hawkweed (*Hieracium umbellatum*, L.).—The habitat of this plant is thickets, &c., dry rocky places, and heaths. The plant has the erect habit. The stem is wiry, with long, loose hairs below, short, without radical leaves. The leaves are stalkless, numerous, smooth, or hairy below, linear-oblong, lance-shaped, the base narrowed, toothed, uniform, the teeth distant, netted, stellately downy below. The heads form an umbel or corymb. The florets are yellow, the top of the slender, rigid flower-stalks cottony. The involucral bracts are dark green, smooth, with bent-back points, blunt. The ligules are smooth. The styles are yellow. This plant is 1-4 ft. high. It flowers in July up till September, and is a herbaceous perennial.

ORDER CAMPANULACEÆ

Spiked Rampion (*Phyteuma spicatum*, L.).—The habitat of this plant is woods and thickets. The habit is erect. The stem is smooth and ribbed. The lower leaves are heart-shaped to egg-shaped or oblong, toothed, stalked, the stem-leaves spreading and bent back, stalkless, linear, lance-shaped. The bracts are linear. The flowers are in an oblong, terminal, solitary head, longer in fruit, with yellow flowers. The styles are long, and there are 2 stigmas. The capsule is 2-celled, opening by longitudinal valves below the middle. The plant is 1-3 ft. in height, flowering in May, June, and July, and is a herbaceous perennial.

Spreading Bell-flower (*Campanula patula*, L.).—The habitat of this plant is copses, thickets, and hedges. The habit is erect or rosette-like. The stem is rough, downy, slender, angled, the radical leaves inversely egg-shaped, oblong, stalked, scalloped, the stem-leaves linear, lance-shaped, wavy. The flowers are in an erect, loose, open panicle or corymb, branched, spreading, blue, rarely white, funnel-shaped, open, on long stalks. The corolla is 5-lobed to the middle, the lobes spreading. The calyx-tube is inversely conical, the segments toothed, awl-like, varying in width. The capsule is erect, inversely conical, the valves close under the lobes of the calyx. The height of the plant is 1-3 ft. It flowers in July and August, and is a herbaceous perennial.

Peach-leaved Bell-flower (*Campanula persicifolia*, L.).—The habitat of this plant is woods, plantations, and downs. The plant has the rosette habit. The rootstock is branched, creeping, with stolons. The stem is round, smooth, and bears few flowers. The radical leaves are stalked, inversely egg-shaped, the stem-leaves stalkless, linear, lance-shaped, blunt, toothed, long and

narrow, leathery, with obscure nerves. The flowers are blue or white, few, in a raceme, large, solitary. The calyx-segments are entire, triangular, lance-shaped. The open corolla is as long as broad, the tube hemispherical, the lobes erect, short. The flower-stalk is stout, with 2 bracts at the base. The capsule is erect, egg-shaped, the pores large. The plant is 1-2 ft. in height, flowering in July, and is a herbaceous perennial or biennial.

Great Bell-flower (*Campanula latifolia*, L.).—The habitat of this plant is woods, copses, thickets, and bushy places. The habit is erect. The root-stock is stout and woody. The stem is stout, simple, leafy, slightly angular, furrowed, downy. The radical leaves are long-stalked, stiffly hairy, downy below, egg-shaped, heart-shaped below, the stem-leaves stalkless, bluntly toothed, oblong, egg-shaped. The flowers are large, blue or white, numerous, erect or partly drooping, in a raceme, with many large bracts or leaves. The stalks are r-flowered. The lobes of the corolla are narrow and long-pointed, smooth, hairy within. The tube of the calyx is broad, short, 5-ribbed, lance-shaped, finely toothed, smooth, with a long, narrow point. The capsule is short, erect, stalked, with basal pores. The plant is 3-4 ft. high, and flowers in July and August, being a herbaceous perennial.

Nettle-leaved Bell-flower (*Campanula Trachelium*, L.).—The habitat of this plant is woods, copses, on dry soil, thickets and hedges, especially in the south. The plant has the pyramidal habit. The stout rootstock is short. The stem is usually simple, leafy, with stiff, reversed hairs, tall, angular. The leaves are all stalked, coarsely toothed, rough, with short hairs. The radical leaves are long-stalked, heart-shaped, the upper shortly-stalked, narrowed from the base, acute, egg-shaped, with a long, narrow point. The flowers are blue, 2-3, on each short stalk, in a raceme or panicle, the flowers single or numerous, erect or partly drooping, the uppermost flowers opening first. The corolla is large, truly bell-shaped, the lobes acute. The lobes of the calyx are entire, stiffly hairy, erect, triangular, lance-shaped. The capsule is drooping, with basal pores. The plant is 1-3 ft. in height, flowering from July to September, and is a herbaceous perennial.

ORDER ERICACEÆ

Strawberry Tree (*Arbutus Unedo*, L.).—The habitat of this plant is woods. The plant has the shrub habit. The stem is small, with rough bark, rounded, much branched. The small branches and leaf-stalks are hairy and glandular. The leaves are leathery, smooth, linear, lance-shaped, toothed. The flowers are numerous, nodding, in a terminal, loose, smooth panicle, on short stalks, cream-coloured. The sepals are short and rounded. The berry is orange scarlet, tubercled, nearly round. The plant is 8-10 ft. in height, flowering in September and October, and is an evergreen shrub.

Intermediate Winter Green (*Pyrola media*, Sw.).

—The habitat of this plant is woods, and heaths in the north. The plant has the rosette habit. The rootstock is creeping. The stem is short, rather woody, and the leaves are numerous, rounded or oval, scalloped, with large bracts. The flowers are milky-white with a pinky tinge, numerous, not much expanded, in a raceme, the lobes of the calyx egg-shaped, acute. The stamens are bent inwards, not so long as the straight or slightly bent style, with a ring at the base of the stigma which has 5 small, blunt, erect lobes. The style projects slightly, and is somewhat longer than the ovary. The capsule is 5-valved, with minute seeds. The plant is 8–12 in. in height, flowering in July and August, and is a herbaceous perennial.

Round-leaved Wintergreen (*Pyrola rotundifolia*, L.).—The habitat of the plant is mountain woods, moist woods, and copses, damp bushy places, and reedy marshes, heaths, &c. The habit is as in the last. The stem bears larger spreading bracts. The leaves are numerous, round, entire, slightly scalloped, inversely egg-shaped. The leaf-stalks are long and slender. The flowers are in a long raceme, white, numerous, expanded. The segments of the calyx are lance-shaped, acute. The stamens are shorter than the style, turned up, ascending or erect. There is a ring below the stigma on the style which is bent down, and curved up at the end, longer than the corolla. The lobes of the stigma are erect and small. The plant is 8–12 in. in height, and flowers in July and August, being a herbaceous perennial.

Mountain Wintergreen (*Pyrola secunda*, L.).—The habitat of this plant is mountain woods, rocky woods, mossy alpine woods, and heaths. The habit is as in the last or more prostrate, the stem straggling with ascending branches. The leaves are numerous, egg-shaped, acute, toothed, forming a rosette, or alternate, thin, netted, on short stalks. The scape is slender with 1–5 bracts. The flowers are arranged all on one side of a raceme, with linear bracteoles, drooping or horizontal, nearly closed, greenish-white, with hollowed, oval-oblong petals, the sepals blunt, notched, rounded, triangular. The stamens are in-bent, not so long as or equal to the style, which is long and straight, ascending. The stigma is broad and lobed, without a ring, and the style lengthens in fruit, and projects. The capsule is drooping. The plant is 2–6 in. high, and flowers in July and August, being a herbaceous perennial.

Snowdrop Wintergreen (*Moneses uniflora*, L.).—The habitat of this plant is woods chiefly in the N. & W. Highlands of Scotland. The habit is as in the last. The stem is leafy. The leaves are few, rounded, toothed, or spoon-shaped, wavy, alternate, membranous, shortly-stalked. The scape bears one bract at the top. The flowers are large, open, solitary, drooping, then erect, terminal, white. The petals are nearly flat, spreading. The sepals are fringed with hairs, blunt and broad. The stamens are shorter than the corolla, closely pressed to the petals. The stalks of the anthers are curved. There is no ring round the long style. The long stigmas are persistent, large. The cap-

sule is erect. The plant is 1–3 in. in height. It flowers from June to August, and is a herbaceous perennial.

ORDER MONOTROPACEÆ

Yellow Bird's Nest (*Monotropa Hypopitys*, L.).

—The habitat of this plant is woods, near roots of fir and beech, and the plant is a saprophyte. The plant feeds on decaying vegetable matter. The stem with fleshy roots is scaly, with bracts above, and is creamy-white, turning black, succulent, unbranched above, forming a terminal raceme or cluster, which is drooping, then erect. The flowers are yellow, hairy, numerous, on short stalks, erect in fruit. The sepals are irregular in position. The anther-stalks are bent inwards, the alternate longer. The upper flowers are in 5 or 6 parts, with 10 stamens, those below in 4 parts, with 18 stamens. The style is short. The fruit is egg-shaped or round, and erect. The plant is 3–12 in. in height, and flowers from June to August, being perennial.

ORDER PRIMULACEÆ

Sowbread (*Cyclamen hederifolium*, Ait.).—The habitat of this species is hedgebanks, copses, woods, and plantations. The habit is like that of a bulbous plant. The root is a flattened tuber, turnip-shaped, fibrous. The autumnal leaves appear after the plant has flowered, and are heart-shaped, 5–9-angular, toothed, dark green, blotched with white, wavy, marginal blottches, purple below. The flowers are pink, with a red base, borne on scapes. The sepals are egg-shaped with a long, narrow point, toothed. The throat of the corolla is 5-angled. The stalk is rolled up spirally when the flower is in fruit. The capsule is 5-valved. The plant is 4–8 in. high, flowering in August and September, and is a herbaceous perennial.

Chickweed Wintergreen (*Trientalis europaea*, L.).—The habitat of this plant is sub-alpine woods, and woods in N. Britain. The habit is erect. The rootstock is creeping. The stem is slender, wiry, with the leaves at the top. The leaves are lance-shaped, inversely egg-shaped, rigid, shining, blunt or acute, shortly-stalked. The flowers are white with a yellow ring on slender stalks. The sepals are linear, awl-like, the petals egg-shaped, acute, and as the sepals in whorls of 7–9. The capsule is large, the size of a pea, the valves soon falling. The seeds are 6-sided, flattened, shield-shape. The plant is 2–8 in. in height. It flowers in June and July, and is a herbaceous perennial.

ORDER OLEACEÆ

Privet (*Ligustrum vulgare*, L.).—The habitat of this shrub is woods, thickets, especially in the south. The plant has the shrub habit. The plant is nearly an evergreen, with smooth slender branches, and bark. The leaves are shortly-stalked, oblong, lance-shaped, entire, acute, opposite. The flowers are in terminal panicles, dense and compound, white. The berries are

round, purplish black or yellow. There are 4 ovules, 1-2 seeds. The plant is 4-15 ft. high, flowering in June and July, and is a semi-evergreen shrub.

ORDER APOCYNACEÆ

Great Periwinkle (*Vinca major*, L.).—The habitat of this plant is copses and hedges. The habit is that of a trailer. The stem is slightly ascending, then prostrate, and does not root again. The leaves are egg-shaped, heart-shaped at the base, acute, fringed with hairs. The flowers are bluish-purple, the corolla salver-shaped in flower. The calyx-segments are long, awl-like, fringed with hairs, and equal to the corolla. The flowering stems root at the tip, and are not tough. The plant is 3-6 ft. long, flowering in April, May, and June, and is a herbaceous or ligneous perennial or undershrub.

ORDER POLEMONIACEÆ

Jacob's Ladder (*Polemonium caeruleum*, L.).—The habitat of this plant is copses, streams, bushy hilly places. The plant has the rosette habit more or less. There is a short, creeping rootstock. There are no hairs on the stems, or the plant may be downy and glandular above, hollow, angular, leafy, simple. The leaves are alternate, pinnate, with 6-12 pairs of nearly stalkless leaflets, with a short-winged stalk. The leaflets are entire, ovate, oblong to lance-shaped, acute or blunt. The flowers are numerous, drooping, blue or white, in a downy glandular panicle. The calyx is bell-shaped, with oblong, acute lobes. The lobes of the corolla are spreading, more or less acute. The capsule is erect and included in the calyx. The seeds are angular, flattened at the border, with a winged, rough testa. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER BORAGINACEÆ

Tuberous-rooted Comfrey (*Symphytum tuberosum*, L.).—The habitat of this plant is copses in wet places, shady places, damp woods, and river banks. The habit is erect, the stem being slender, glandular, hairy, leafy, nearly simple, scarcely winged, the rootstock tuberous. The leaves hardly run down the stem, the radical leaves being long-stalked, egg-shaped, lance-shaped, the stem-leaves lance-shaped. The flowers are yellowish-white, small. The anthers are twice as long as the stalks. The plant is 1-2 ft. in height, and flowers from May to July, being a herbaceous perennial.

Purple Gromwell (*Lithospermum purpureocarneum*, L.).—The habitat of this plant is copses and thickets. The habit is prostrate. The barren shoots are creeping, the flowering stems rigid, erect, simple or branched, the branches rough. The leaves are lance-shaped, narrow, nearly stalkless, acute, roughly hairy, the hairs above

closely pressed, bulbous. The flowers are bright blue, large, few, in terminal cymes, the corolla longer than the calyx, with large, leafy bracts. There are no scales in the throat of the corolla, but five downy folds. The nutlets are smooth, shining, polished, white, round. The plant is 1-2 ft. in height, and flowers in June and July, being a herbaceous perennial.

Spotted Lungwort (*Pulmonaria officinalis*, L.).—The habitat of this plant is plantations, woods, copses, thickets, and it is frequent in cottage gardens. The habit is the rosette habit. The leaves are spotted, blotched with pale green, egg-shaped, lance-shaped, heart-shaped, long-stalked, the upper stalkless, oblong. The flowers are in a terminal, forked cyme, pale purple, then pink. The throat of the corolla is usually smooth. The plant is 12-18 in. high, flowering from April to June, and is a herbaceous perennial.

Narrow-leaved Lungwort (*Pulmonaria angustifolia*, L.).—The habitat of this plant is woods in the South of England. The habit is erect. The rootstock is short and stout. The stem is hairy, brittle. The radical leaves are stalked, spotted, pale green, lance-shaped, narrow, the stem-leaves stalkless, smaller, oblong, acute, half-clasping. The flowers are pink, then blue, in a short cyme, bent inwards, with leafy bracts. The flower-stalks are slender. The lobes of the calyx are lance-shaped, enlarged in fruit. The corolla is hairy inside. The nutlets are black and smooth. The plant is 6-15 in. in height, flowering in May and June, and is a herbaceous perennial.

Green-leaved Hound's Tongue (*Cynoglossum montanum*, L.).—The habitat of this plant is woods, copses, shady situations, and waste places. The habit is erect. The stem is rough with short, straight, spreading hairs with a bulbous base. The plant is more slender and green than the common form. The leaves are thin, semi-transparent, slightly hairy or smooth, shining above, acute, rough below, the lower leaves oblong, long-stalked, and the stem-leaves are stalkless, narrowed below, half-clasping. The flowers are red then blue. The sepals are linear, long in fruit. The nutlets are not thickened on the margin, and the marginal spines are the longest. It is 1-3 ft. in height, flowering in June and July, and is a herbaceous biennial.

ORDER SCROPHULARIACEÆ

Knotted Figwort (*Scrophularia nodosa*, L.).—The habitat of this plant is thickets, plantations, shady places, moist hedges, and waste places. The habit is erect. The stem is four-angled, without wings, smooth below, simple. The rootstock is tuberous, nodose. The leaves are egg-shaped, heart-shaped to triangular, acutely and doubly toothed, the lower teeth large, with strong nerves, shortly-stalked. The flowers are small, green or reddish-brown, in loose cymes, with a scale or staminode under the upper lip, notched, wedge-shaped. The sepals have a narrow membranous margin, and are egg-shaped, roundish.

The tube is pale greenish-purple. The bracts are linear, acute, leafy below, the slender erect flower-stalks glandular below. The capsule is broadly egg-shaped, with a narrow point. The plant is 1-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Downy Figwort (*Scrophularia Scorodonia*, L.).—The habitat of this plant is shaded places, moist situations, and way-sides in the S. and E. of England. The habit is as in the last. The stem is downy or hairy, glandular, simple, blunt, 4-angled. The rootstock is creeping. The leaves are downy both sides, scalloped, toothed, wrinkled, egg-shaped, triangular, the leaf-stalk not winged. The flowers are dull purple in long loose panicles, corymbose, on slender flower-stalks. The corolla has the upper lip divided. The staminode is round, entire. The membranous margin of the downy sepals is broad. The bracts are leaflike. The capsule is egg-shaped or nearly round, with a long, narrow point. The plant is 2-4 ft. in height, flowering from June till August. It is a herbaceous perennial.

Sylvan Speedwell (*Veronica montana*, L.).—The habitat of this plant is moist woods and thickets. The habit is prostrate, then ascending. The stem is branched, spreading, downy all round. The leaves are stalked, broadly egg-shaped, inversely heart-shaped, toothed. The flowers are pale blue, few, in loose, short racemes, alternate, with broad, lance-shaped (acute) sepals. The capsule is large, rounded, flat, longer than the calyx, smooth, the margin rather scalloped, fringed with hairs. The plant is 6-20 in. in length, flowering from May till July, and is a herbaceous perennial.

Alpine Cow-wheat (*Melampyrum sylvaticum*, L.).—The habitat of this plant is alpine or sub-alpine woods. The habit is erect and branched above. The leaves are smooth or finely downy, linear, lance-shaped, entire. The flowers are very small, deep yellow, nearly erect, axillary, arranged on one side of the stalk, or in distant pairs. The corolla is twice as long as the calyx, the lip not closed, the lower bent down, and the tube curved, the flowers unsymmetrical. The bracts are linear, lance-shaped, entire. The calyx-teeth are spreading. The capsule is not bent down. The plant is 6-24 in. in height. It flowers in July and August, and is a herbaceous annual.

Crested Cow-wheat (*Melampyrum cristatum*, L.).—The habitat of this species is woods, copses, thickets, and fields in the E. counties. The habit is as in the last. The stem is erect, rigid, blunt, 4-angled, downy above. The leaves are narrow, linear, lance-shaped, acute, spreading, entire, with netted veins below. The flowers are yellow, with purple tips, in dense, oblong, 4-sided, overlapping spikes. The bracts are overlapping, finely fringed, pink, rose or purple, heart-shaped, the margins enclosing the calyx, folded, with a long point, bent back. The tube is bent, longer than the calyx, with closed lips. The sepals are acute and unequal, short, the upper longer, awl-shaped. The capsule is longer than the calyx. The plant

is 8-24 in. in height, and flowers from July to October, being a herbaceous semi-parasitic annual.

ORDER OROBANCHACEÆ

Toothwort (*Lathraea Squamaria*, L.).—The habitat of this plant is woods and thickets, or damp shady places, where it is parasitical on the roots of hazel, &c. The habit is erect, that of a parasite. Both the branched rhizome and scapes bear scales, those on the rhizome thick and fleshy, and folded back on themselves. The leaves have undulating chambers, with glands of two kinds, the one club-shaped, 2-celled, stalked, in the other the cells are like a flat dome. The cells bear filaments which entangle and capture animals that enter the chambers, digesting their juices. The rootlets are attached to the roots of the host by tubercles. The plant is flesh-coloured or bluish, with purple streaks. The scapes are stout. The flowers are dull purple or white in bent-down racemes, one-sided, the flowers nearly stalkless. The bracts are entire, egg-shaped, lance-shaped. The calyx is 2-lipped. The lower lip of the arched corolla is divided into three, the upper entire or divided nearly to the base into two lobes. The anthers are united and covered with hairs. The style projects, and is bent down or straight, and the stigma is purple. The capsule is egg-shaped. The plant is 4-10 in. high, flowering in April and May, and is perennial.

ORDER LABIATAE

Bastard Balm (*Melittis Melissophyllum*, L.).—The habitat of this plant is woods and copses in the south. The habit is erect, more or less pyramidal. The stem is simple or branched. The leaves are oblong, egg-shaped, heart-shaped, toothed, scalloped, with the scent of Woodruff, stalked or stalkless, the nerves hairy below. The bracts are leaflike. The flowers are creamy-white, with white margin and pink or purple spots or variegated. The corolla-tube is nearly straight, with an oblique mouth and spreading lips. The upper lip of the calyx with 2-3 teeth is open, with short, broad sepals. The nutlets are smooth or netted. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Alpine Woundwort (*Stachys alpina*, L.).—This plant is found in woods at medium altitudes. The habit is erect. The stem is hairy, glandular above. The leaves are oblong, egg-shaped, heart-shaped below, toothed, the lower ones are scalloped, long-stalked. The leaves on the flowering stems are large, stalkless, mostly toothed. The bracts are linear, lance-shaped, as long as the calyx. The flowers are purple, with white spots, in distant axillary whorls. The corolla much exceeds the calyx, which is hairy externally, the teeth of the latter being broadly and narrowly pointed. The plant is 1-3 ft. in height, flowering in June and July, and is a herbaceous perennial.

BRITISH FLORA

ORDER ARISTOLOCHIACEÆ

Asarabacca (*Asarum europaeum*, L.).—The habitat of this plant is woods (in Yorks), shady places, banks, under hedges. The habit is rosette-like. The rootstock is creeping and fleshy. The stem and branches are short. Two leaves and two large scales are developed annually. The leaves are radical, dark-green, on long stalks, evergreen, kidney-shaped, blunt, shining. The scapes are axillary, short, and downy. The flowers are bell-shaped, drooping, lurid purple, or greenish-brown, solitary, the stalk short and bent back. The perianth lobes are bent inwards, egg-shaped. The anther-stalks are awl-like, the alternate ones longer. The styles are bent back, the stigma projecting. The fruit is round, leathery, with wrinkled, boat-shaped seeds. The plant is 4–6 in. high, flowering from May to August, and is a herbaceous perennial.

ORDER THYMELEACEÆ

Mezereon (*Daphne Mezereum*, L.).—The habitat of this plant is woods and copses. Mezereon has the shrub habit. The branches are few and erect. The leaves are deciduous, inversely egg-shaped or spoon-shaped, lance-shaped, narrow below, acute, membranous, stalked, and appear after the flowers. The flowers are usually in threes, stalkless (or nearly so), lateral in the axes of the previous year's leaves, purple, pink, rarely white. The tube is hairy, as long as the lobes, which are egg-shaped, acute. The fruit—a berry—is bright red, egg-shaped. The plant is 1–3 ft. in height, flowering in March, and is a deciduous shrub.

ORDER LORANTHACEÆ

Mistletoe (*Viscum album*, L.).—The habitat of this plant is woodlands, where it is parasitic on trees—Hawthorn, Apple, Poplar, rarely on Oak. It is a parasite, with the shrub habit. The branches are smooth, yellowish-green, rounded, dividing into two regularly, knotted. The yellow-green colour is supposed to be due to the plant being nourished by the descending sap, which is partly elaborated, and green leaves are thus dispensed with. But the leaves undoubtedly manufacture carbohydrates in winter in the ordinary way, and the root is fixed in the host so that it receives both the ascending and the descending sap. The plant thus establishes a symbiotic relationship. The leaves are broader in the male plant, opposite or in whorls inversely egg-shaped or lance-shaped, blunt. The flowers are green, the males in threes, the females in fives, in axillary clusters, stalkless. The berries are rounded, clammy, white, transparent, 1-seeded, crowned with the calyx. The plant is 1–3 ft. in height, flowering from February to May, and is an evergreen shrub.

ORDER EUPHORBIACEÆ

Spurge (*Euphorbia stricta*, L.).—The habitat of this plant is woods. The habit is erect, spurge-like.

The stem is much branched. The leaves are oblong, lance-shaped, scattered, clasping. The "flowers" or flowerheads are greenish-yellow in a moderate umbel, with a small involucre with oval lobes, 3–5, with 3–5 divided and forked rays. The general and partial bracts are clasping, the remaining bracts heart-shaped. The stamens are usually 2 in each involucre. The capsule is small, with conical warts. The seeds are small, smooth, shining, oblong, reddish-brown. The plant is 12–36 in. in height, flowering from July to September, and is a herbaceous annual.

Irish Spurge (*Euphorbia hiberna*, L.).—The habitat of this Spurge is copses and hedges, shady places. The plant is downy. There are several leafy more or less simple stems. The leaves are elliptic, ovate, lance-shaped, oblong, the upper ones heart-shaped, entire, stalkless, blunt or notched at the tip, thin, broad, downy below. The flowerheads are in an umbel of 5 rays, twice forked. The bracts are broad, the upper ones rounded at the base. The lobes or glands of the involucre are kidney-shaped. The capsule is nearly round, furrowed, warty, the warts cylindrical, the valves not keeled, smooth. The seeds are smooth, broad, pale brown, inversely ovate, shining. The plant is 1–2 ft. high, flowering from May to July, and is a herbaceous perennial.

Euphorbia dulcis, L.—This species occurs in plantations. The habit is erect. The leaves are long, lance-shaped, narrowed to the base, inversely ovate, blunt. The bracts are similar. The flowerheads are in umbels of 5 long rays, divided into 2 nearly to the base. The partial bracts are triangular to ovate, blunt at the base. The involucral glands are purple and rounded. The capsule has few prominent tubercles, when young downy. The plant is 9–18 in. long, flowering in May and June, and is a herbaceous perennial.

Hairy Spurge (*Euphorbia pilosa*, L.).—The habitat of this species is shaded places. The habit is as in the last. The plant is hairy or downy. The stem is tall, branched at the top, with numerous leaves. The leaves are hairy, oblong, lance-shaped, with fine teeth, blunt. The bracts are yellow, oblong, blunt, egg-shaped or elliptic. The flowerheads are greenish-yellow, in an umbel of 4–6 rays, divided into 3, then 2, nearly to the base. The involucre is smooth or hairy, with oblong glands, with oval lobes. The capsule is smooth or hairy, warty, the seeds inversely egg-shaped, smooth. The plant is 2–4 ft. in height, and flowers in May and June, being a herbaceous perennial.

Leafy Wood Spurge (*Euphorbia Esula*, L.).—The habitat of this plant is woods, fields, stream-sides. The habit is creeping. The stem is erect, slender, leafless below, simple, the lateral branches in the axils not bearing flowerheads. The leaves are oblong, lance-shaped, with small teeth, stalkless, blunt or acute, thin, 1-nerved. The bracts are kidney-shaped, heart-shaped, blunt, with a point. The flowerheads are greenish-yellow in an umbel with 10–20 rays, which are forked at the top, and slender. The involucres are long-

stalked, small, the lobes with 2 points. The capsules are granulate, the seeds smooth, brown, rounded. The plant is 1-3 ft. high, flowering from June till August, and is a herbaceous perennial.

Cypress Spurge (*Euphorbia Cyparissias*, L.).—The habitat of this plant is woods and plantations and grassy places, railway banks, brick pits, &c. The habit is that of the last. The plant is bluish-white. The rootstock is creeping and stoloniferous. The leaves are more numerous, narrow, linear, entire on the barren shoots, bristle-like, close, turning red. The bracts are blunt, heart-shaped, united below, rounded. The flowerheads are bright yellow, in an umbel of many forked rays. The involucre has lobes with 2 horns. The capsule bears tubercles, and contains many white, smooth, rounded seeds. The plant is 9-15 in. in height. It flowers in June and July. The plant is a herbaceous perennial.

Caper Spurge (*Euphorbia Lathyris*, L.).—The habitat of this plant is stony and rocky woods, and copses and cultivated ground. The habit is erect. The stem is purplish, thick, short, bearing leaves the first year, flowering the next. The leaves are numerous, opposite, in alternate pairs, linear-oblong, the upper heart-shaped, smooth, bluish-white, stalkless, spreading, 1-nerved, blunt, the apex rounded, with a short point. The bracts are heart-shaped below. The flowerheads are yellow, large, in umbels with 3-4 forked rays, which are unequal. The involucre is large, stalkless, the glands moon-shaped, with 2 nearly erect, blunt points. The capsule is smooth, with a dorsal line. The seeds are rigid, wrinkled. The plant is 1-4 ft. high, flowering in June and July, and is a biennial or perennial.

ORDER AMENTACEÆ

Silver Birch (*Betula alba*, L.).—The habitat of this plant is woods and heaths. The Birch has the tree habit. The bark is silvery white, flaky. The branches are erect, or drooping. The leaves are smooth, rhomboid, triangular, toothed, leathery, resinous, blunt below. The leaf-stalks are slender. The young shoots have resinous tubercles. The stipules are egg-shaped, lance-shaped. The male catkins are pendulous, with 1 sepal. The female catkins are in a solitary spike, not so long, and nearly erect. The scales of the fruit are winged, wedge-shaped, 3-lobed to the middle, the lateral lobes bent back, spreading. The fruit is inversely egg-shaped, rounded, with a notched wing, in threes. The Birch is 20-80 ft. in height. It flowers in April and May, and is a deciduous tree.

Birch (*Betula tomentosa*, Reich.).—This plant differs in habit, being bushy, with rhomboid, egg-shaped leaves, the lateral lobes of the fruiting bracts being erect. The young shoots are downy. The leaves are smooth, flat above, with raised veins beneath. The stipules are egg-shaped, blunt, twice as broad as long, the sides turned down. The buds are egg-shaped. The twigs are often pendulous. It is 6-15 ft. in height,

flowering in May and June, and is a deciduous tree or shrub.

Hazel (*Corylus Avellana*, L.).—The habitat of this shrub is woods, copses, and hedges. The Hazel has the tree or bush habit. The trunk may have a girth of 3 ft. It has the young twigs usually glandular, roughly hairy or downy. The branches are tufted, the bark rich brown, smooth, warted. The leaves are rounded, in two rows, with an unequal base, heart-shaped, with a narrow point, downy below, toothed, with blunt points. The stipules are blunt, oblong. The male catkins are long, drooping, in a raceme, the female flowers in egg-shaped buds nearly stalkless. The fruit is woody, clustered, the involucre bell-shaped, spreading, or palmate, a cupule. The Hazel grows to a height of 6-20 ft. or rarely 30 ft. It flowers in March, and is a deciduous shrub.

Hornbeam (*Carpinus Betulus*, L.).—The habitat of this tree is woods in central and southern England, damp clayey woods, and hedges. The Hornbeam has the tree habit. It is a small tree, with a trunk, flattened, frequently of 10 ft. girth. The bark is smooth and ashen-grey. The leaves are more or less in two rows, shortly stalked, egg-shaped, elliptical, plaited in the bud, with double, deep, and sharp teeth, hairy below. The male catkins are pendulous, the bracts acute, egg-shaped, lance-shaped. The female catkins are pendulous in fruit, cylindrical, with an entire or toothed bracteole. The female bracts are 3-lobed, the middle one largest, the lobes lance-shaped. The fruit is green with 7-11 ribs. The Hornbeam is 70 ft. in height when full grown. It flowers in May. It is a deciduous tree.

Sweet Chestnut (*Castanea sativa*, Mill.).—In this country it is a very doubtful native, having been cultivated since Caesar's time, and found in parks and plantations. The Sweet Chestnut has the tree habit. The trunk is usually twisted, and deeply, spirally furrowed. The leaves are oblong, lance-shaped, toothed, smooth both sides, with narrow, long, blunt points. The barren catkins are long and cylindrical. The perianth is made up of 6 segments. There are 8-20 stamens. The fertile flowers are 3 in a 4-lobed prickly involucre. There are 6 stigmas. The nut is 1-celled with 1-3 seeds. The Sweet Chestnut is 60-90 ft. in height, flowering in April and May. It is a deciduous tree.

ORDER SALICACEÆ

White Poplar (*Populus alba*, L.).—The habitat of this tree is moist woods, river banks, &c. The White Poplar has the tree habit. The bark is grey and smooth. The branches are spreading. The buds are cottony. There are many suckers. The leaves are triangular, egg-shaped, 5-lobed, and toothed. The leaves are smooth at length, downy in bud, roundish, heart-shaped, wavy, white and cottony below. The leaf-stalk is long, slender, flattened. The catkins are cylindrical, the males hairy, longer. There are 6-10 stamens, and the anthers are purple. The stigmas (2-4)

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are linear, yellow, cross-like. The capsules are egg-shaped, narrow. The tree is 60-100 ft. high, flowering in March and April, and is a deciduous tree.

Sallow (*Salix Caprea*, L.).—The habitat of this willow is woods, copses, hedges, stream-sides, &c. The habit is that of a small tree or shrub. The stem is grey. The leaves are egg-shaped, elliptic, lance-shaped, acute, with a long point, scalloped, reticulate, cottony below, flat, wavy at the border, deep-green, whitish above. The twigs and buds are downy. The stipules are small, narrow, rather kidney-shaped or moon-shaped. The catkins are short, silky, with bracts, blunt and thick, stalkless, the female longer, the male oblong. The female catkins nod at length. The scales are hairy. The style is short. The capsule is silky. The stalk is slender. The Sallow is 10-30 ft. high, flowering before all others in April and May.

Eared Sallow (*Salix aurita*, L.).—The habitat of this species is woods, moist copses, heaths, &c. The habit is as in the last, with straggling branches with reddish twigs. The leaves are wrinkled when young, reddish, scalloped, crisped, stalked, downy, netted below, the point hooked, edges bent down. The buds are smooth. The stipules are large, kidney-shaped, the catkins stalked. The catkins appear before the leaves, are shorter than in the last, the male egg-shaped, the female cylindrical. The stigma is usually entire. The style is short. The scales are persistent. The capsule is cottony, narrower, awl-like, lance-shaped. The Eared Sallow is 2-4 ft. in height, flowering in April and May, and is a deciduous shrub.

Grey Sallow (*Salix cinerea*, L.).—The habitat of this species is woods and wet places. The plant has the tree or shrub habit. The buds and twigs are cottony. The leaves are elliptic to oblong, lance-shaped, inversely egg-shaped, acute, toothed, the borders wavy, downy above, bluish-white or ashy (hence *cinerea*) below. The stipules are large, half heart-shaped. The male catkins are not so stout as in the Sallow, and open later. The anthers are pale yellow, the anther-stalks hairy at the base, the stigmas simple or divided into two nearly to the base. The capsule is lance-shaped and awl-like. The plant is 10-20 ft. high, flowering from March to April, and is a deciduous shrub or tree.

ORDER ORCHIDACEÆ

Bird's Nest Orchis (*Neottia Nidus-avis*, Rich.).—The habitat of this species is dark woods, especially beech woods, but it grows also on hazel, like Toothwort. It is a saprophyte, with the habit of a parasitical plant. The root is formed of a mass of thick fibres (hence Bird's Nest). There is a succulent rhizome. The stem is leafless, thick, sheathing, brown, hairless, scales taking the place of leaves. The numerous flowers form a dense cylindrical spike, and are pale brown. The lip is linear-oblong, bent down, the 2 lobes spreading. The sepals and petals are hooded. The lip

has a hollowed-out base. The anther is hinged to the column, which is slender and free, 2-celled. The 2 pollinia are powdery, the glands united below. The stigma stands out. The rostellum is tongue-shaped. The plant is 6-18 inches high, flowering in June and July, and is a herbaceous perennial.

Lesser Twayblade (*Listera cordata*, R. Br.).—The habitat of this species is mountain woods and moors, turf moors, and it is frequent in Scotland. The habit is erect. The stem is short, slender, hairless, angled, delicate, brownish-green. The leaves are membranous, heart-shaped to egg-shaped, acute, stalkless, opposite, paired. The flowers are few, small, in a loose raceme, the sepals and petals olive-brown, blunt, the tip dirty yellow-green, with 4 lobes, 2 basal, 2 terminal, linear. The column has no crest. The plant is 3-6 in. high, flowering from June to August, and is a herbaceous perennial.

Creeping Goodyera (*Peramium (Goodyera) repens*, Br.).—The habitat of this plant is pine and fir woods. The plant has a prostrate then ascending orchid habit. The root is creeping (hence *repens*), slender, matted. The whole plant is covered with glands. The stem is slender, and with the spike glandular, downy. The leaves are stalked, egg-shaped, netted, downy below, acute, dark green. The spike is slender with linear, awl-like, lance-shaped, closely pressed bracts, longer than the ovary. The flowers are spiral, small, creamy-white. The sepals, petals, and the lip are egg-shaped, lance-shaped. The plant is 4-10 in. in height. It flowers from June to August, and is a herbaceous perennial.

Epipogium Gmelini, Rich.—The habitat of this plant is shady woods, amongst decaying leaves. The plant is a leafless saprophyte, brownish. The rhizome consists of short, thick, fleshy, branched fibres. The stem is pale yellowish-brown, sheathed, swollen above the base, with 1-2 closely-pressed bracts. The flowers are 2-6, pale yellow, shortly stalked, in a raceme. The sepals and petals are lance-shaped, acute, pale yellow, nearly equal, with inrolled margins, the middle lobe of the lip egg-shaped, furrowed, white, with 4 rows of purple tubercles. The lip is bent back, the lateral lobes are small. The spur is blunt, very thick, and short. The ovary is broad and short. The column is short, swollen above the stigma to take the base of the anther. The anther is terminal and falls. The 2 pollinia are stalked, the glands united at the base. The stigma is prominent, horseshoe-shaped. There is no rostellum. The plant is 4-8 in. The plant flowers in August and September, and is a herbaceous perennial.

Broad-leaved Helleborine (*Helleborine latifolia*, Sw.).—The habitat of this orchid is woods, mountain woods, &c. The habit is erect. The stem is erect. The stem is downy above, solitary. The leaves are many-veined, rounded, egg-shaped to lance-shaped, oblong, longer than the internodes, the upper ones egg-shaped, oblong. The sheaths are close below. The bracts exceed the flowers,

the lower being leaflike, narrow. The flowers are pendulous, numerous, in a raceme, nearly all on one side of the stalk, green, the lip purple, with white or yellow margins. The sepals are broadly egg-shaped, the petals white, egg-shaped to lance-shaped. The lip may be as long as or shorter than the lance-shaped sepals. The labellum is round to heart-shaped with a bent-down point, broader than long, scalloped. The terminal lobes have thickened ridges on the disk. The flower-stalk is shorter than the ovary. The basal hunches are smooth. The plant is 1-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Helleborine atroviridis, W. R. Linton.—This species is found in Derbyshire and elsewhere, and closely resembles the last, from which it is distinguished by the labellum having 2 side hunches and 1 median, linear hunch.

Helleborine violacea, Bor.=*H. purpurata*, Druce.—The habitat of this species is woods. The habit is like that of *H. latifolia*. The plant grows in clusters. The stem and leaves are purple-tinted. The lower leaves are 3-4 by 1½-2 in., egg-shaped, lance-shaped, the upper narrowed, passing into slender bracts, and the latter are longer than the oblong, downy ovaries. The flowers are violet-purple. The sepals are oblong to lance-shaped, more pointed than in *H. latifolia*. The tip of the lip is as broad as long, and sub-triangular, less than the sepals and petals. The hunches are plaited, scalloped. The stalks are shorter than the downy ovary. The label is longer than broad, entire, with a narrow point. The plant is 1-3 ft. in height, flowering in August, and is a herbaceous perennial.

Large White Helleborine (*Cephalanthera pallens*, Rich.=*C. Damasonium*, Druce).—The habitat of this species is woods and copses. The habit is erect, the stem tufted. The leaves are oval to oblong, lance-shaped, the upper narrower, the bracts longer than the hairless ovary. The flowers are creamy-white, distant, nearly erect. The sepals and petals are egg-shaped to oblong, blunt. The terminal lobe of the lip is rounded, erect, yellow. The lip has raised, longitudinal lines. The plant is 9-18 in. in height, and flowers in May and June, and is a herbaceous perennial.

Narrow-leaved Helleborine (*Cephalanthera ensifolia*, Rich.=*C. longifolia*, Fritsch).—The habitat of this plant is hilly woods and copses. The habit is erect, the stem nearly solitary, slender. The leaves are egg-shaped, lance-shaped, not so long as in the last species. The bracts are not so long as the hairless ovary, the upper minute. The flowers are white, and narrower. The sepals, especially the outer, are more acute. The lip has several raised white lines and a yellow spot in front, and is blunt. The plant is 1-2 ft. in height, flowering in May, and is a herbaceous perennial.

Red Helleborine (*Cephalanthera rubra*, Rich.).—The habitat of this plant is woods and copses. The habit is erect. The stem is slender, red-tinted. The leaves are lance-shaped, acute, and the bracts are longer than the glandular, downy

ovary. The flowers are open, few or many, purple or rose colour. The lip is white, with a purple border as long as the petals, with many wavy, longitudinal lines, the terminal lobe egg-shaped, lance-shaped. The sepals and petals have a long, narrow point. The point is 6-18 in. high, flowering in June and July, and is a herbaceous perennial.

True Military Orchis (*Orchis militaris*, L.).—The habitat of this plant is chalky hills and woods. The habit is erect. The tubers are egg-shaped. The leaves are large, 3-5 in., oblong, blunt, concave, without spots. The bracts are short, 1-nerved. The flowers are bright or pale purple, in an oblong dense spike. The sepals and petals have a narrow point. The petals are pale purple or white. The lip is pale, with raised rough points, 3-lobed, the lobes oblong, crimson, with purple dots. The basal lobes are narrow, the lateral lobes linear, the middle broader, suddenly widened, 2-lobed, with an intermediate tooth, entire at the tip, broad. The helmet, formed by the hooded sepals which include the petals, is rose-coloured. The spur is about half as long as the ovary, bent down, blunt. The plant is 1-1½ ft. high, flowering in May and June, and is a herbaceous perennial.

Monkey Orchis (*Orchis Simia*, Lam.).—The habitat of this plant is chalky hills, woods on calcareous soil. The plant is not so large as the last, more slender. The bracts are minute. The lip is long, narrow, 1-veined, with an intermediate bristle-like tooth. The lobes are equal in size and resemble in form the legs, arms, and tail of a monkey (hence *Simia*), and are rose-purple, linear, long, entire. The middle lobes are very narrow. The sepals are acute, meeting to form an egg-shaped hood. The helmet is rose-colour outside, paler within. The spur is half as long as the ovary. The plant is 6-12 in. high, and flowers in May, being a herbaceous perennial.

Lizard Orchis (*Orchis hircina*, Crantz).—The habitat of this plant is copses, bushy chalk hills, and grassy places. The habit is erect, the stem tall. The tubers are egg-shaped. The leaves are mostly radical, oblong, blunt. The bracts exceed the flowers. The flowers are large, purplish-white, loose, in a long spike, with a hircine, goat-like (hence *hircina*), fetid scent. The sepals and petals form a green hood, the lateral sepals conning. The lip is 3-lobed, white, with purple spots below, spiral in bud, the lateral lobes wavy, narrow, the middle broad, green, twisted. The spur is short and conical. The pollen-glands are united. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Orchis cruenta, Muell.—This rare species is found in Cumberland and Westmorland. It is closely allied to *O. latifolia*, but differs in having the leaves broadest in the middle, short, blunt. The plant is 7-12 in. in height, and flowers in June and July, being a herbaceous perennial.

Man Orchis (*Aceras anthropophora*, R.Br.).—The habitat of this plant is copses, pastures, dry chalky places. The habit is erect. The root-knobs

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or tubers are egg-shaped. The leaves are oblong to lance-shaped, the lower blunt, the upper acute. The bracts are small. The perianth is green. The flowers are greenish-yellow, in a long, dense spike. The sepals are egg-shaped, acute, meeting together, with a purple border, and include the linear, lance-shaped, blunt petals. The lip is 3-lobed, perpendicular, yellow, with red borders, narrow, with 2 lateral and 2 terminal lobes, equal and linear, thread-like, the middle one divided into two nearly to the base, with an intermediate tooth. The plant is 8-16 in. high, flowering in June, and is a herbaceous perennial.

Spider Orchid (*Ophrys aranifera*, Huds. = *O. sphagodes*, Mill.).—The habitat of this plant is copses, downs, chalky places. The habit is as in the last. The flowers are few, purplish-brown. The petals are green, hairless, short, linear, oblong, the sepals yellow, green inside. The lip is deep, dull brown, hairy, swollen, broad, convex, 4-lobed, with no intermediate appendage in the notch, and has hairless, pale markings resembling a Greek letter in the centre, the edges shortly-lobed, and not (or very slightly) turned down. The middle lobe is large, entire, or notched. The anther is acute, the beak not hooked. The plant is 4-12 in. high, flowering in April and May, and is a herbaceous perennial.

Fly Orchid (*Ophrys muscifera*, Huds.).—The habitat of this orchid is woods, copses, downs, damp chalky thickets, and pastures. The habit is as in the last. The stem is slender. The leaves are few, linear to oblong. The flowers are distant, bluish-purple. The petals are very narrow, linear, thread-like, reddish-brown. The sepals are yellowish-green. The lip is narrow, oblong, dark purple, 3-lobed, with a broad, nearly square, pale-blue spot in the centre, edged with yellow, the middle lobe long, and divided into two nearly to the base, the lateral lobes turned back. The anther is short and blunt, not beaked. The plant is 6-15 inches high, flowering from May to July. It is a herbaceous perennial.

Butterfly Orchid (*Habenaria bifolia*, Br.).—The habitat of this orchid is wet meadows, woods, heaths. The habit is erect. The stem is tall, and, as the second Latin name denotes, there are only 2 leaves, which are large and oval, blunt. The bracts are small and lance-shaped, as are the upper leaves. The flowers are white, in a slender close spike, small, with an entire linear lip, the petals blunt, meeting together, the spur linear, twice as long as the ovary, the anther cells parallel, and the caudicle short, the gland oblong or oval. The stigma is blunt, with a notch and pointed lobes. The flowers are sweet-scented. The plant is 9-18 in. high. It is in flower from June to August, and is a herbaceous perennial.

Large Butterfly Orchid (*Habenaria chlorantha*, Bab. = *H. virescens*, Zoll.).—The habitat of this orchid is moist woods and thickets. The habit is erect. The plant is tall and stout. The 2 leaves are opposite, large, oval. The flowers are creamy-white, large, arranged in a loose or dense spike. The petals are blunt, uniting. The

lateral sepals are broad, spreading. The spur is long, stout, bent down, club-shaped, twice as long as the ovary. The lip is entire, linear. The anther-cells are distant, usually spreading, twice as distant at the base as at the top. The central line between is a prominent ridge in front, a groove behind. The stalk of the pollinia or caudicle is longer, attached by a short drumlike stalk to the rounded gland. The stigma is broad, pointed in the middle. The anther is blunt. The plant is 6-20 in. high, flowering in July and August, and is a herbaceous perennial.

Lady's Slipper (*Cypripedium Calceolus*, L.).—The habitat of this plant is dense northern woods, chalky woods, or limestone woods. The habit is as in other orchid types. The stem is leafy below or above, downy. The leaves are 3-4, large, oblong, egg-shaped, pointed, ribbed. The bracts are leaflike. The flowers are solitary or 2, large, yellowish-brown. The upper sepal is erect, egg-shaped, lance-shaped, pointed, the lateral narrower, united below, under the lip. The lip is entire, long, inversely egg-shaped, pale yellow, with darker, netted veins, with a round, upturned end, not so long as the sepals, depressed, swollen. There are 2 fertile anthers, distinguishing it from other British orchids. The middle lobe of the column is egg-shaped, blunt, bent down. The plant is 12-18 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER IRIDACEÆ

Fétid Iris (*Iris fétidissima*, L.).—The habitat of this orchid is copses and dry hedgebanks. The habit is typically flag-like. The rootstock is stout and creeping. The stem is flattened at the margin, angled. The leaves are green, fétid when bruised, limp. The scape is leafy. The flowers are blue or purple, livid. The stalks are not longer than the ovary. The spathes are long-pointed. The sepals are petaloid, lance-shaped to inversely egg-shaped, purple, or yellow. The petals and stigmas are yellow, spoon-shaped. The perianth is beardless, the segments bent back. The berries are rounded, orange-red, with a fleshy testa, the capsule club-shaped. The plant is 2-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Gladious (*Gladious illyricus*, Ker.).—The habitat of this species is open woods, amongst bracken, in the New Forest. The habit is similar to that of the last. The corm is about the size of a nut, egg-shaped, pointed, with bulbils below, with nearly parallel fibres, netted above, with long, narrow openings. The leaves are sword-shaped, bluish-green, slender. The sheaths are 2-edged. The scape is leafy. The spathes are lance-shaped, nearly equal. The flowers are in a spike, arranged all one side of the stalk, 4-8, red, changing to blue. The perianth is bent over, bell-shaped, the 3 upper segments spoon-shaped, the 3 lower inversely egg-shaped, paler, with purple veins. The tube is nearly 3 times the length of the ovary. The basal petal is acute, longer than the blunt

lower lateral petal, the edges of the upper not covered by the 2 others. The stigmas are spoon-shaped, narrow below, widening upwards, and fringed. The anther-stalks are longer than the anthers. The capsule is leathery, club-shaped, oval, notched, the 3 angles rounded. The seeds are winged. The plant is 1-3 ft. high, flowering in July, and is a herbaceous perennial.

ORDER AMARYLLIDACEÆ

Daffodil (*Narcissus Pseudo-Narcissus*, L.).—The Daffodil is a native species, and is found in woods, copses, and pastures. The habit is erect. The bulb has membranous outer scales. The 2-3 leaves are linear, with a blunt keel, nearly flat, rather bluish-green, blunt. The flowers are solitary, yellow, bell-shaped. The scape is 2-edged. The tube and acute perianth-segments are nearly equal, long. The crown is bell-shaped, the margin 6-lobed, crisped, scalloped. The spathe surrounds the flower-stalk, which is short. The capsule is conical. The plant is 6-12 in. in height, the leaves never more than a foot long. The Daffodil flowers from March to May. It is a herbaceous perennial.

Daffodil (*Narcissus incomparabilis*, Mill.).—Like the last this plant, which is a native of Europe, is not indigenous in this country, but occurs in the south in many spots, as at Little Park, Margam, and in shrubberies, parks, and gardens. The habit and other characters are like those of *N. obvallaris*, but it has an erect crown half as long as the perianth, which in the Tenby plant is all yellow, the segments twice as long as the tube, and the crown 6-lobed.

Spring Snowflake (*Leucojum vernum*, L.).—The habitat of this plant is copses. The habit is lily-like. The plant is bulbous. The flowers and leaves are vernal (hence *vernus*). The leaves are nearly in 2 rows. The scape bears 1-2 flowers, not markedly winged. The spathe is divided into two nearly to the base. The flowers are drooping, greenish-white. The style is thickened above. The ovary is rounded. The seeds are caruncled. The plant is 6-12 in., flowering in March and April, and is a herbaceous perennial.

ORDER LILIACEÆ

Butcher's Broom (*Ruscus aculeatus*, L.).—The habitat of this shrub is copses and thickets. The plant has the shrub habit. The stems are tufted, branched, rigid, erect, stout, angled. The young shoots are scaly. The flattened branches or cladodes are twisted below, and take the place of leaves, the leaves being small scales, the cladodes in their axils. The cladodes are spiny, egg-shaped, narrowed, acute, tough, woody, rigid. The flowers are borne in the centre of the cladodes, and are white and solitary, on the upper, which is the apparent lower surface. The short flower-stalk is parallel with the surface. The male flowers are borne on the narrower cladodes. There are usually 1-2 flowers, with a flat membranous border,

1-veined, awl-like bract. The fruit is a berry, scarlet, 1-celled. The seeds are rounded. The plant is 1-2 ft. high, flowering in March and April. It is an evergreen shrub, perennial.

Whorled Solomon's Seal (*Polygonatum verticillatum*, All.).—The habitat of this plant is woods, wooded banks, and glens. The habit is erect, from a prostrate rhizome, with an arching, graceful scape. The stem is angled, erect, tall. The leaves are in whorls of 3-5 (hence *verticillatum*), stalkless, limp, the margins and veins below fringed with hairs, and linear to lance-shaped. The flowers are greenish-white. The perianth is narrowed in the middle, greenish. The flower-stalks bear 1-5 flowers. The anther-stalks are papillose. The fruit is a berry, red when ripe. The plant is 2-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Common Solomon's Seal (*Polygonatum multiflorum*, All.).—The habitat of this plant is woods. The habit is as in the last. The stem is rounded, leafless below, arching. The leaves are alternate, arranged one side of the stalk, oblong to egg-shaped, half-clasping, hairless, shortly stalked, acute or blunt. The perianth is greenish-white, narrowed in the middle. The stalks bear 2-5 flowers. The anther-stalks are downy. The berries are bluish. The plant is 2-4 ft. high, flowering in May, June, July, and is a herbaceous perennial.

Small Solomon's Seal (*Polygonatum sigillum*, Lej.).—The habitat of this plant is woods and limestone cliffs. The habit is as in the last. The stem is angled and arched. The leaves are alternate, elliptic, lance-shaped, or oblong to egg-shaped, arranged one side of the stalk, half-clasping, leathery. The flowers are solitary, large. The perianth is cylindrical, greenish-white, the lobes broad. The anther-stalks are without hairs. Rarely the flower-stalks bear 3 flowers. The berry is bluish-black. The plant is 6-18 in. high, flowering in May and June, and is a herbaceous perennial.

Mayflower (*Unifolium bifolium*, Drude = *Maianthemum Convallaria*, Roth).—The habitat of this plant is woods. The habit is lily-like. The plant is downy or smooth. The stem is erect, wavy. The rootstock is thread-like, creeping. The radical leaves are heart-shaped, acute, 2-lobed below, with many nerves, long-stalked. The 2-3 stem-leaves are short-stalked, the upper stalkless. The flowers are fragrant, small, yellow, sulphur colour, in a terminal, spiked raceme, nearly erect. The stalks are slender and solitary. The bracts are minute. The 4 segments of the perianth are turned back. The fruit is a round berry, white, dotted, with a blunt point. The plant is 4-8 in. high, flowering in May (hence Mayflower), and is a herbaceous perennial.

Bath Star-of-Bethlehem (*Ornithogalum pyrenaicum*, L.).—The habitat of this plant is woods and copses. The habit is lily-like. The bulb is egg-shaped. The aerial stem is a tall, stout scape. The leaves wither before the stalk appears, and are vernal, hollow above, bluish-green, linear.

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The bracts are awl-like. The flowers are numerous, in a long, narrow, spiked raceme. The flower-stalks are spreading at first, then erect. The perianth-segments are narrow to oblong, variable in length, green, the margins white inside. The anther-stalks are swollen below to the middle, long-pointed. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Drooping Star-of-Bethlehem (*Ornithogalum nutans*, L.).—The habitat of this plant is copses, shrubberies, orchards, fields, and waste places. The leaves are linear, lance-shaped, broad, bluish-green, with a white stripe, grooved. The scape is as long as the leaves. The bracts are long and slender. The flowers are white, few, drooping (hence *nutans*), in a loose raceme. The flower-stalks are curved, shorter than the bracts. The perianth is broad, with lance-shaped segments, green externally. The anther-stalks are broadly swollen upwards, 3-lobed, flat, membranous, the lateral points acute, the middle short, bearing the anther. The capsule is pendulous, egg-shaped, green, and fleshy. The plant is 9-12 in. high, flowering in April and May, and is a herbaceous perennial.

Purple Martagon Lily (*Lilium Martagon*, L.).—The habitat of this plant is woods and copses. The habit is lily-like. The stem is downy, rough, rounded. The leaves are stalked, inversely egg-shaped to lance-shaped, in whorls of 6-8, the upper linear, acute. The flowers are in an erect raceme, drooping, sweet-scented at night. The bracts are green, linear to lance-shaped. The perianth-segments are flesh-coloured to purple, bent back, oblong, with dark, raised papillæ. The honey-gland has thick, raised borders. The plant is 1-1½ ft. high, flowering from June to September, and is a herbaceous perennial.

Pyrenean Lily (*Lilium pyrenaicum*, Gouan).—The habitat of this lily is hedgebanks. The habit is as in the last. The leaves are scattered, linear, lance-shaped. The flowers are yellow, with black dots below, nodding. The perianth is turned back, and the segments linear lance-shaped, yellow. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Yellow Star-of-Bethlehem (*Gagea lutea*, Ker.).—The habitat of this plant is woods, thickets, pastures. The habit is lily-like. The stem is angular, not as long as the leaf. The bulb is solitary, small, egg-shaped or nearly round, with basal bulbils. The radical leaf is linear lance-shaped, ribbed, flat. The scape is short. There are 1-3 bracts, 2 opposite, 1 exceeding the flowers. The sheath is slender. The flowers are yellow, in an umbel. The perianth-segments are linear-oblong, blunt, thin, yellow-green at the back. The flower opens only in the middle of the day. The capsule is membranous, the seeds numerous. The plant is 6-10 in. high, flowering in March till May, and is a herbaceous perennial.

Herb Paris (*Paris quadrifolia*, L.).—The habitat of this plant is damp woods. The habit is erect. The rootstock is white, creeping. The

stem is round, leafy above, with a sheath below. The leaves are egg-shaped to oblong, or inversely egg-shaped, 4 as a rule when the flowers are in 4's, or more when the segments are more, 3-5-nerved. The flowers are solitary, stalked, erect. The sepals are lance-shaped, green, with a long point, as long as the yellow awl-like petals. The connective is produced. The fruit is a black berry, which bursts irregularly. The seeds are black. The plant is 6-12 in. high, flowering in May, and is a herbaceous perennial.

ORDER JUNCACEÆ

Hairy Wood Rush (*Luzula vernalis*, D.C.=*Juncoides pilosum*, Morong).—The habitat of this rush is woods, thickets, and shady places. The habit is the usual rush type. The rootstock is short and tufted, with slender stolons. The stems are slender, numerous. The leaves are as long as the stem, broad, lance-shaped, soft, sparsely hairy. The bracteoles are short and broad. The flowers are in a loose cyme, with few, turned-down, hair-like branches in fruit. The flowers are more or less solitary, chestnut-brown, paired. The perianth-segments have a long, narrow point, shorter than the capsule, which is broad, egg-shaped, blunt-pointed. The crests of the seeds are curved, terminal. The plant is 6-12 in. high, flowering in May and June, and is a herbaceous perennial.

Forster's Wood Rush (*Luzula forsteri*, Sm.).—The habitat of this species is thickets, woods, and shaded places. The habit is as in the last. It is more slender than the last. The leaves are linear, hairy. The flower-stalk is 1-flowered, erect in flower and fruit, the flowers in a panicle with few branches. The stamens are as long as the style, the anther-stalks as long as the anthers. The capsule is acute, 3-angled, not narrowed below. The seeds have a short, terminal, straight, blunt crest. The plant is 6-12 in. high, flowering in March to June, and is a herbaceous perennial.

ORDER CYPERACEÆ

Grassy Sedge (*Carex remota*, L.).—The habitat of this sedge is copses and damp places. The habit is sedge-like. The stem is slender, inclined, 3-angled. The leaves are channelled, narrow, as long as the stems, flat. The bracts are long, leaf-like. The spike has a rough rachis, and the spikelets are all simple, the upper crowded, oblong, the lower remote (hence *remota*). The fruit is egg-shaped, lance-shaped, longer than the glumes, narrow to egg-shaped, pale, finely furrowed. The beak is broad, with toothed margins. The midrib of the glume does not reach the point. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Elongate Sedge (*Carex elongata*, L.).—The habitat of this sedge is wet copses and marshes. The habit is sedge-like. The plant is slender, with a tufted rootstock and many stems, 3-angled, rough, graceful, leafy. The leaves are longer

than the stems, limp, flat. The bracts are short or none. The spike is slender. The spikelets are numerous, the upper close, oblong, erect or spreading, those below loose, not distant. The glumes are egg-shaped, dark-brown, with green keel with white edges. The fruit is pale, stalkless, ribbed, spreading, longer than the glumes, blunt, with a long point. The beak is nearly entire, with rough edges. The nut is linear to oblong. The style does not fall. The plant is 1-2 ft. high, flowering from June to August, and is a herbaceous perennial.

Pale Sedge (*Carex pallescens*, L.).—The habitat of this plant is woods, shady places, marshy copses, and meadows. The habit is sedge-like. The stem is slender, leafy, 3-angled, rough above, wiry. The leaves are erect, softly sparsely hairy, flat, green. The spikes are blunt, pale-green. The small spikelet is erect, yellowish-red, the female rather nodding, close, 2-3, oblong, egg-shaped, shortly-stalked. The glumes are blunt-pointed, few, pale-brown, with white borders and a green midrib. The fruit is hairless, egg-shaped, oblong, blunt, convex both sides, veined. There is no beak. The nut is inversely egg-shaped, linear to elliptic, 3-angled. The plant is 9-18 in. in height, flowering from June to August, and is a herbaceous perennial.

Great Pendulous Sedge (*Carex pendula*, Huds.).—The habitat of this plant is damp woods. The habit is sedge-like. The stem is tall and leafy, 3-angled or rounded, smooth or rough. The leaves are broad, pale-green, flat. The bracts are leaf-like, sheathed below, nearly as long as the flower-stalks. The fertile spike is long, drooping (hence *pendula*), nearly stalkless, curved, blunt, cylindrical, dense, the stalks enclosed by the bracts, the upper with male flowers above. The males are inclined, sometimes with male and female flowers, or female below only. The glumes are spreading, blunt, or divided nearly to the base, pale-brown, with a hairy awn, green midrib, pale ragged border. The fruit is hairless, swollen, overlapping, with a short, notched, 3-angled beak. The nut is short, broad, pale. The plant is 3-6 ft. high, flowering in May, and is a herbaceous perennial.

Fingered Sedge (*Carex digitata*, L.).—The habitat of this species is copses on limestone. The habit is sedge-like. The stems are smooth, slender, erect or curved, sheathed below, bluntly 3-angled. The radical leaves are bent back, with a rolled-back margin, flat, soft, linear. The bracts are blunt, the lower awl-like, membranous, brown, green-tipped. The fertile spikelets are 2-3, with 6-8 flowers, loose, distant, erect, linear. The males are solitary. The fruit is inversely egg-shaped, hairy, 3-angled, narrow below, as long as the glume, with a short, straight, nearly entire beak. The nut is stalked, brown, 3-angled, with a short beak. The plant is 6-10 in. high, flowering in April and May, and is a herbaceous perennial.

Hammer Sedge (*Carex hirta*, L.).—The habitat of this plant is damp copses, wet places, grassy

places. The habit is sedge-like. The stem is slender, hairless, leafy, shining, 3-angled. The leaves are long, flat, hairy, with split sheaths, rarely hairless. The sheaths are long. The lower bracts are sheaths. The male spikes are close, 2-3, pale, glistening. The fertile spikes are distant, green, cylindrical, oblong, stalked. The glumes are small, broad, with membranous margin and a green midrib, the awn rigid, rough, spreading. The fruit is tawny, egg-shaped to oblong, narrowed into a short beak, deeply divided nearly to the base. There are 3 stigmas. The nut is inversely egg-shaped. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Tall Wood Sedge (*Carex laevigata*, Sm.=*C. helodes*, Link.).—The habitat of this plant is wet thickets and copses, and marshes. The habit is sedge-like. The stem is tall, smooth. The leaves are broad, short, dotted beneath. The bracts are sheathing, auricled opposite the blade. The male spikelets are 3-angled, 2, with blunt, short-pointed glumes. The fertile spikelets are drooping, cylindrical, distant, with exerted stalks. The glumes are acute, purple, with a pale dorsal, longitudinal band. The fruit is green, egg-shaped, narrowed, finely furrowed. The beak is slender, long, with rough edges. The ligule is long. The nut is stalked, 3-angled, pale, dotted, narrowed below, rather pear-shaped. The plant is 2-3 ft. high, flowering in June, and is a herbaceous perennial.

Few-seeded Sedge (*Carex depauperata*, Good.=*C. ventricosa*, Curt.).—The habitat of this species is dry woods. The habit is sedge-like. The stem is slender, smooth, leafy, 3-angled. The leaves are long and flat. The bracts are flat, rough, leaflike, the sheaths long. The spikelets are erect, short, distant, 3-4-flowered, the males with a blunt, pale glume, very slender, with many flowers. The fertile spikes are erect, distant, 3-4-flowered, on exerted stalks. The fruit is large, rounded, with a long slender beak, divided into 2 nearly to the base, with rough edges, ribbed. The nut is elliptic, 3-angled, the angles blunt. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Common Wood Sedge (*Carex sylvatica*, Huds.).—The habitat of this species is damp woods. The habit is sedge-like. The plant is slender, with a 3-sided, smooth stem, rough at the top. The leaves are flat, membranous, bright-green, narrow. The bracts are leaflike with long sheaths, not half as long as the flower-stalks. The male spikelets are pale. The female are thread-like, branched below, the stalk half projecting. The glumes are loose or scattered, acute, egg-shaped, green, keeled. The fruit is elliptic, nearly stalkless, obscurely veined, with a long, slender, smooth beak, which is divided into 2 nearly to the base. The nut is broad, 3-sided. The plant is 2 ft. in height, flowering in May and June, and is a herbaceous perennial.

Loose Sedge (*Carex strigosa*, Huds.).—The habitat of this plant is woods, groves, thickets,

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copse. The habit is sedge-like, the stem smooth, leafy, 3-angled. The leaves are flat, broad, pale-green, limp, the sheaths auricled opposite the blade. The bracts are leafy, shorter than the stems, the sheaths long. The male spikelets are pale and slender. The fertile spikelets are slender, drooping, distant, long, loose, many-flowered, with exserted stalks. The fruit is oblong, lance-shaped, veined, narrowed each end, with a blunt mouth, the beak obscure. The nut is elliptic. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Millet Grass (*Milium effusum*, L.).—The habitat of this grass is damp, shady woods. The habit is grass-like. The stem is stoloniferous below, tall, tufted, erect, shining. The leaves are lance-shaped, linear to oblong, broad, flat, thin, acute, rough above, pale-green, scented. The sheath is smooth. The ligule is long, blunt, torn. The panicle is branched, spreading, loose, and slender, bent down in fruit, vertical in flower, the whorls distant, few-flowered. The pales are acute. The empty glume is elliptic to egg-shaped, blunt, with rough, transparent edges, and the flowering glume is smooth, white, polished. The fruit is rounded, included in the glume and palea. The plant is 2-4 ft. high, flowering in June and July, and is a herbaceous perennial.

Rough Drooping Brome Grass (*Bromus asper*, L.).—The habitat of this plant is woods, thickets, hedgebanks. The plant has the grass habit. The stem is tall and smooth. The leaves are broad, flat, with hairy sheaths, with downwardly-directed hairs, long, the lower broadest. The ligule is short. The panicle is drooping, downy, with flowers arranged all one side. The lower branches are 2-6-divided, loose, thread-like, with a rough rachis. The spikelets are narrow, bluish-green. The empty glumes are long-pointed, hairy or not. The flowering glumes are 5-8, twice as long as the awn, spreading in flower, erect in fruit, hairy, the tip 2-toothed. The plant is 4-5 ft. high, flowering in July, and is a herbaceous perennial.

Common Wood Reed (*Calamagrostis epigeios*, Roth).—The habitat of this plant is damp woods, and damp shady places. The habit is grass-like. The stem is simple, stout, the leaves rough above, bluish-green below, the point slender. The ligule is acute and torn. The panicle is purplish-brown, open, erect, with nearly erect branches, close, lobed. The spikelets are crowded, arranged one side of the stalk. The empty glumes are narrow. The hairs are longer than the pales, the awn straight. The plant is 3-5 ft. high, flowering in June and July, and is a herbaceous perennial.

Small Wood Reed (*Calamagrostis lanceolata*, Roth).—The habitat of this plant is damp woods, copses, hedges, marshes, and wet places. The habit is as in the last. The stem is erect, smooth, slender. The leaves are narrower and smoother than in the last. The ligule is shorter. The

panicle is erect, loose, purplish, the branches spreading, with a drooping apex. The spikelets are spreading. The empty glumes are lance-shaped, broader. The awn is not so long, small, terminal. The hairs are longer than the flowering glume. The plant is 2-4 ft. high, flowering from June to August, and is a herbaceous perennial.

Soft Grass (*Holcus mollis*, L.).—The habitat of this plant is dry woods, thickets, heathy places, sandy waste places, open places on a light soil. The plant has the grass habit. The root is creeping. The plant is more slender than *H. lanatus*. The stem is smooth or slightly hairy, softly hairy at the nodes. The leaves are rough, the sheaths hairless. The lower flower has no awn. The upper glume is acute, the awn rough, kneeled, longer than the glumes. The glumes are rough, long-pointed. The plant is 1-3 ft. high, flowering in June till August, and is a herbaceous perennial.

Mountain Melic Grass (*Melica nutans*, L.).—The habitat of this plant is calcareous woods. The habit is the grass habit. The plant is stoloniferous. The stems are thread-like, drooping, 3-sided, rough above, with scaly sheaths. The leaves are flat, slender, sparsely hairy, rough on the keel and margin. There is no ligule or a short one. The panicle is drooping, or a one-sided, simple raceme, the rachis wavy. The spikelets are drooping, egg-shaped, 6-10, and 2-flowered, the 2 upper flowers complete. The empty glumes are purple, oblong, the flowering glumes greenish, keeled, purple, hairless. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Sylvan Melic Grass (*Melica uniflora*, Retz.).—The habitat of this plant is shady and rocky places. The habit is as in the last. The leaves and spikelets are few, erect, the perfect flowers similar. The panicle is loose, branched, slightly drooping, the rachis thread-like. The ligule is long, from the auricles of the sheath. The stalks are hairlike, roughish, 2-flowered. The glume equals the palea. The plant is 1-2 ft. high, flowering from May to July, and is a herbaceous perennial.

Sylvan Poa (*Poa nemoralis*, L.).—The habitat of this plant is woods, copses, and shady places. The habit is the grass habit. The root is somewhat creeping. The stem is smooth, like the sheaths, which are furrowed, the upper not longer than the leaf, green or bluish-green, very slender, rounded or slightly flattened. The leaves are linear, narrow, limp, the upper horizontal. The ligule is short and blunt. The panicle is slender, drooping, with branches 2-5-divided, roughish. The spikelets are egg-shaped to lance-shaped, the 3-4 flowers webbed, yellowish-green. The empty glumes equal the 1-5 flowering glumes with a downy keel and margin. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Poa chaixii, Vill.—The habitat of this plant is woods and plantations in deep shade. The plant has the grass habit. The stem is 2-edged, with a

creeping rhizome. The plant is tufted. The leaves are hooded, broad, the edges and midribs rough as well as the sheaths, the upper sheath not longer than its leaf. The ligule is blunt and very short. The panicle is branched. The spikelets are oval, with 3-5 acute, not webbed florets, the lower pale with 5 hairless veins. The plant is 2-5 ft. high, flowering in June and July, and is a herbaceous perennial.

Great Brome Grass (*Festuca gigantea*, Vill.).—The habitat of this plant is woods and shady places, moist thickets, damp woods, hedgebanks. The plant has the grass habit. The root is fibrous. The stem is smooth, round, nodding. The leaves are very long, broad, flat, rough both sides, except near the base below, linear, lance-shaped, limp, bright-green, finely furrowed. The sheaths are smooth. The ligule is unequal, auricled. The panicle is open, drooping, branched. The spikelets are linear, egg-shaped, pale-green, and bear 3-8 florets, roughish, and the awn is slender, wavy, twice as long as the flowering glume. The empty glumes are lance-shaped, the flowering glumes divided into 2 nearly to the base. The plant is 2-4 ft. high, flowering in July and August, and is a herbaceous perennial.

Various-leaved Fescue (*Festuca heterophylla*, Lam.).—The habitat of this plant is woods and plantations. The stem is tall. The plant is not stoloniferous. The radical leaves are long, bristle-like, densely tufted. The stem-leaves are flat. The panicle is long, loose. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Great Wood Brome Grass (*Festuca sylvatica*, Vill.).—The habitat of this plant is woods in hilly and mountainous districts. The habit is the grass habit. The root is fibrous, the stolons sheathed. The stem is stiffly erect, smooth, rounded, sheathed below, the sheaths tufted, acute, broad, smooth, overlapping, the lower loose. The leaves are broad, green, with a rough edge. The ligules of the upper sheaths are long. The panicle is spreading, open, nodding, branched, erect, with branches one side of the stalk. The rachis is long, slender, rough. The 3-5 flowering glumes are acute, rough, without an awn. The top of the ovary is hairy. The spikelets are egg-shaped, flat, pale yellow-green, the empty glumes linear to awl-like. The plant is 2-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Sylvan False Brome Grass (*Brachypodium*

sylvaticum, R. and S.).—The habitat of this plant is copses, woods, hedges, and hedgerows. The plant has the grass habit. The root is fibrous. The stems are erect, very slender, rounded, inclined, leafy, solitary or 2-3 from the same root. The leaves are broad, flat, hairy, bright-green, linear-lance-shaped, limp, fringed with hairs. The sheaths are hairy, round. The ligule is short, blunt, torn, or notched. The spike is drooping, with a flattened rachis, smooth and slender. The spikelets are rounded, alternate, in two rows, linear, appressed, hairy or smooth, green. The empty glumes are 3-5-nerved, the flowering glumes 8-10, linear-oblong, the tip long and narrow, awned, the awn as long as the glume, those of the upper flowers longer than the hairy palea. The plant is 1-3 ft. high, flowering in June, July, and is a herbaceous perennial.

Dog's Wheat Grass (*Agropyron caninum*, Beauv.).—The habitat of this grass is woods, shady places, hedges, banks, and waste places. The plant has the grass habit. The root is fibrous. The stems are bright-green, erect, slender. The leaves are flat, rough both sides, ribbed, slender on the upper surface. The spike is slender, wavy, close, nodding. The spikelets are slender, green, 2-5-flowered, with 3-5 ribs, with a short stalk, downy or smooth. The 2 empty glumes are rough, shortly awned, the awn long and rough, 3-nerved, firm, the flowering glumes linear-lance-shaped, 5-nerved at the tip, the awn rough, longer or shorter than the palea. The plant is 1-3 ft. high, flowering in June till August, and is a herbaceous perennial.

Wood Barley (*Hordeum sylvaticum*, Huds.=*Elymus europaeus*, L.).—The habitat of this species is woods, thickets, copses. The plant has the grass habit. The plant is bright-green. The stems are rigid, erect, smooth. The leaves are broad, flat, thin, rough. The sheaths are hairy, with bent-back hairs. The ligule is very short. The spike is nearly rounded, rough, rigid, erect, green. The spikelets are erect, nearly stalkless, sometimes with a second flower. The glumes are awl-like, rough, not fringed with hairs. The lateral flowers are perfect, the middle male. The flowering glumes are linear to oblong, rough, shorter than the awn, which is straight and wavy, nerved. The empty glumes are long-awned, awl-like, rough. The fruit is narrow. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

FLOWERS OF THE ROADSIDES AND HEDGES

[As in the case of cornfields, hills, waste places, walls, &c., the plants that are included here may be found in some other habitats occasionally, since the roadside and the hedge are of modern origin. But the latter are pre-eminently the stations for a number of plants that are especially fond of a hedge-bottom or a bank, and they afford a place of refuge for such species from the attacks of cattle. The shade-lovers also that have survived the cutting down or disappearance of the woods and forests are able to flourish in the hedge.]

ORDER CRUCIFERÆ

Barbarea arcuata, Reichb.—The habitat of this plant is roadsides, banks of ditches, cultivated ground. The habit is the rosette habit, the plant having radical leaves and an erect stem. The plant is yellowish-green. The leaves are much as in the common Yellow Rocket. The flowers are larger, the petals last longer, are more than twice as long as the sepals, and are in a long looser raceme. The pods are long, spreading (the raceme being arched when young), and are 5-8 times as long as the stalks. The styles are longer. The seeds are smaller, darker, more than twice as long as broad. The plant is similar in height, flowering, and duration to *B. vulgaris*.

American Cress (*Barbarea præcox*, Br.).—The habitat of this plant is roadsides, cultivated ground, and waste places, and it is a garden escape. The plant has the rosette habit. Hooker considered it a cultivated form of *B. vulgaris*, to which it is closely allied. The lower leaves are divided nearly to the base, with narrow lobes, or lyrate, larger upwards, the upper pair of lobes as long as the nearly heart-shaped terminal lobe. The upper leaves are divided nearly to the base, the lobes entire, linear, oblong. The flowers are yellow, medium-sized, in a close raceme, the petals 3 times as long as the sepals, the flower-stalks short and stout. The style is short. The pods are spreading, long, distant, not much broader than the flower-stalks, jointed, with a short, thick point. The seeds are longer than broad by one-quarter, twice as broad and ellipsoid as in *B. vulgaris*. The plant is 9 inches to 2 ft. high, flowering from May to July, and is a herbaceous biennial.

Bury Hedge Mustard (*Sisymbrium polyceratum*, L.).—The habitat of this plant is roadside paths. The habit is prostrate or erect, and branched. The stem is hairless, leafy. The leaves, with lobes turned back, divided nearly to the base, hairless, or only with a large terminal lobe, are triangular and toothed. The flowers are in short, leafy racemes, small, yellow. The style is short, thick, the stigma blunt. The pods are 1-3, in the axils of leafy bracts, awl-like, spreading, broad

below, stalkless, or shortly stalked, the stalks short and thick. The valves of the pods are 3-nerved, convex, beaded, blunt. The plant is 18 in. high, flowering in July and August, and is a herbaceous annual.

ORDER CARYOPHYLLACEÆ

Soapwort (*Saponaria officinalis*, L.).—The habitat of this plant is roadsides, hedges, riverbanks, fields, banks of streams on the borders of Wales, &c., in which last case it may be indigenous. The habit is erect. The rootstock is white, fleshy, stoloniferous. The stem is stout, leafy, straight, ascending. The plant is hairless, bluish-green. The leaves are oblong, lance-shaped, 3-ribbed, the upper sheathing, united below. The flowers are in a cyme or panicled corymb, large, pale-pink or white. The petals are inversely heart-shaped, with a long narrow claw, crowned, notched, the calyx cylindrical, not angled. The capsule is egg-shaped. The seeds are kidney-shaped. The plant is 1-3 ft. high, flowering in August and September, and is a herbaceous perennial.

Bladder Campion (*Silene Cucubalus*, Wib.=*S. inflata*, Sm., and *S. latifolia*, Mill.).—The habitat of this species is roadsides, fields, and waste places. The habit is erect. The plant is branched, bluish-green except in the axils, where rain collects and is probably absorbed, smooth as a rule. The stem is erect, with no barren prostrate stems. The leaves are hairless, egg-shaped or inversely so, oblong, or elliptic to lance-shaped. The bracts have a membranous border. The flowers are white, terminal, panicled, the branches unequal, numerous, drooping, the petals deeply cleft, rarely crowned, with narrow lobes, the calyx inflated (hence *inflata*), netted, the mouth narrower than the base. The capsule is rounded, conical above. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous perennial.

Three-nerved Sandwort (*Arenaria trinervis*, L.).—The habitat of this species is hedgebanks, moist copses, woods, damp shady places. The habit is prostrate. The stem is limp, weak, branched, with spreading hairs. The leaves are stalked,

egg-shaped, acute, 3- or rarely 5-nerved (hence *trinervis* in the first case), fringed with hairs, like the stalks, the upper stalkless. The flowers are small, in the axils, solitary, or in a cyme, long-stalked, the stalks slender and spreading at length, white. The petals are inversely egg-shaped, lance-shaped. The sepals are 3-ribbed, the lateral veins faint, the intermediate rib strongest, rough, lance-shaped, longer than the petals. There are 10 stamens, or the plant may rarely be pentandrous. The capsule is nearly round, included in the calyx, the seeds smooth, with an arillus. The plant is 6-12 in. long, flowering in May and June, or as late as November, and is an annual.

ORDER GERANIACEÆ

Small Crane's Bill (*Geranium pusillum*, L.)—The habitat of this plant is waysides, hedge-banks, cultivated ground, and waste places. The habit is prostrate, then erect, or with a semi-rosette habit. The stem is spreading, downy, the down soft and short. The leaves are as in *G. molle*, but deeply lobed, kidney-shaped, with 5-7 lobes radiating from a common centre, divided into three. The flowers are numerous, small, pale-rose, not longer than the calyx, the stalks in the axils shorter than the leaves, bent down in front. The petals are notched, the claw fringed with hairs. The sepals are blunt, pointed, or acute. The perfect stamens are often only 5. The style is pale flesh-colour. The carpels persist, and are keeled, not wrinkled, with closely pressed hairs. The seeds are smooth. The plant is 6-18 in. high, flowering from June to September, and is a herbaceous annual.

Jagged-leaved Geranium (*Geranium dissectum*, L.)—The habitat of this plant is hedges, waste places, and cultivated ground. The habit is prostrate, then ascending. The stem is branched, hairy, and rather glandular. The leaves are much-divided nearly to the base, with 5-7 linear segments, deeply irregularly lobed, longer than the short flower-stalks. The footstalks are short. The stipules are egg-shaped, with a long, narrow point. The flowers are axillary, small, shortly-stalked, bluish-purple or bright-red, the petals notched, short, inversely egg-shaped, the claw fringed with hairs, about as long as the sepals, which have a long awn. The carpels are not wrinkled, smooth, even, or with erect hairs. The seeds are pitted. The plant is 6-18 in. high, flowering from June to August, and is a herbaceous annual.

Shining Crane's Bill (*Geranium lucidum*, L.)—The habitat of this plant is hedgerows, hedge-banks, rocky places, and old walls. The habit is prostrate, then ascending. The plant is brittle and succulent. The stem is hairless, shining (hence *lucidum*), spreading, tinged with red. The upper branches have two lines of hairs. The leaves are rounded, kidney-shaped, 5-lobed, the segments scalloped, bent, blunt-pointed. The leaf-stalks are long, but less than the flower-stalk. The stipules are egg-shaped, acute. The flowers are rose-

colour. The calyx is wrinkled, pyramidal. The claw of the inversely egg-shaped, entire petal is without hairs, long, nearly equal to the calyx, which has long-awned sepals, shorter than the petals. The carpels are wrinkled, keeled, netted, separating from the axis, hairless, glandular, or hairy above. The seeds are smooth.

ORDER LEGUMINOSÆ

Smooth Tare (*Vicia tetrasperma*, Moench).—The habitat of this plant is hedgerows, bushy places, hedges, meadows, cornfields, and woods. The habit is climbing. The stems are thread-like. The leaflets are in 3-6 pairs, blunt, narrow, linear to oblong, with a short point. The stipules are half arrow-shaped, the lower divided into two nearly to the base. The tendrils are once- or twice-forked. The stalks bear 1-2 flowers, which are as long as the leaves, pale-blue, the standard with blue streaks, notched. The calyx-teeth are long, triangular, unequal, shorter than the tube, the two upper spreading. The ultimate flower-stalks are short and curved. The pods are shortly-stalked, 4-seeded, smooth, linear to oblong, the hile oblong. The seeds are 3-5, rounded, dull-brown, roughish. The plant is 1-2 ft. high, flowering from June to August. It is a herbaceous annual.

Slender Tare (*Vicia gracilis*, Lois.).—The habitat of this plant is hedges, fields, in the south, and waste places, and the plant is rare. The habit is as in the last. The leaflets are in 3-4 pairs, linear, long, narrow, with a long narrow point, acute. The stipules are half arrow-shaped. The flowers are twice as large as in the last, the stalks bearing 1-4 flowers, and longer than the leaves, pale-blue, with a notched standard. The calyx-teeth are unequal, shorter than the tube, the 2 upper shortest, meeting together, long, triangular. The pods are 5-8-seeded, hairless, longer than in the last, linear, the upper entire, rather bent down at the end. The seeds are rounded, dark-brown and yellow, half as large as in the last, and the hile half as long, round to oval. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous annual.

Common or Hairy Vetch (*Vicia hirsuta*, Gray).—The habitat of this plant is hedges, cornfields, waste places. The habit is as in the last. The plant is, however, hairy (hence *hirsuta*). The leaflets are not so large, in 6-8 pairs, linear, lance-shaped, blunt, with a short point. The stipules are 4-lobed. The stalks bear 1-6 flowers, and are as long as the leaves, the ultimate ones straight, the flowers smaller, pale-blue, the standard not notched. The calyx-teeth are equal, as long as their tube, the 2 upper meeting, awl-like. The pods are 2-seeded, hairy, rarely smooth, stalkless, shorter, oblong, blunt, the upper entire, nearly straight, and prominent at the end. The seeds are round, flattened at the border, red with dark spots, smooth. The plant is 1-2 ft. high, flowering between June and August, and is a herbaceous annual.

Common Hedge Vetch (*Vicia sepium*, L.).—

BRITISH FLORA

The habitat of this plant is hedges, woods, and copses. The habit is climbing or trailing, the lower part of the stem weak and thin. The leaves are hairy, the leaflets egg-shaped, lance-shaped, blunt, in 4-8 pairs, smaller upwards on the leaf-stalk, membranous. The stipules are half arrow-shaped, entire or divided. The flowers are in a raceme, nearly stalkless, axillary, purplish, 2-6-flowered, the stalks shorter than the calyx-teeth. The calyx-teeth are unequal, shorter than their tube, the 2 upper curved upwards, hairy. The upper part of the style is hairless, or nearly so, bearded. The pod is stalked, hairless, erect, linear to oblong, beaked, black, 6-10-seeded. The seeds have the hilum linear, extending two-thirds round the seed. The plant is 6 in. to 3 ft. high, flowering from May to August, or as late as November, and is a herbaceous perennial.

Common Vetch (*Vicia sativa*, L.).—The habitat of this plant is hedges, roadsides, waysides, where it is an escape from cultivation. The habit is as in the last, climbing or trailing. The stem is stout. The leaflets are in 5-7 pairs, variable, elliptic, inversely heart-shaped, or egg-shaped to oblong, blunt or notched, the lower shorter and broader, the upper narrow, linear, blunt, short-pointed. The stipules are half spear-shaped, entire. The flowers are axillary, solitary, or usually paired, nearly stalkless, pale-purple, the standard smooth. The calyx-teeth are equal, lance-shaped to awl-like, as long as their tube. The pods are mostly parallel to the stem, stalkless, 2-3 in., linear, 4-10-seeded, rather hairy or silvery. The seeds are rounded, slightly flattened at the border. The hilum is linear, extending $\frac{1}{4}$ round the seed. The plant is 6-18 in. high, flowering from May to July, and is a herbaceous annual.

Bithynian Bush Vetch (*Vicia bithynica*, L.).—The habitat of this species is bushy places on a gravelly soil, and waste places. The habit is trailing or climbing. The stems are numerous from the root, hairless except above, wavy. The leaves are long. The tendrils are long, branched. The leaflets are in 1-2 pairs above, linear, lance-shaped, blunt, short-pointed, acute. The stipules are large, toothed, half arrow-shaped. The flowers are pale-purple with paler wings. The calyx-teeth are slender, longer than their tube, unequal, lance-shaped, awl-like. The calyx is swollen below. The stalks are 1-3-flowered, less than the leaves, the ultimate ones as long as the calyx. The pod is shortly stalked, netted, hairy, linear-oblong, rough, large, beaked, 4-6-seeded. The seeds are large, round, speckled, dark-brown, with an oval hilum. The style is hairy all over above. The plant is 1-2 ft. high, flowering from May to August, and is a herbaceous perennial.

Grass-leaved Vetchling (*Lathyrus Nissolia*, L.).—The habitat of this species is grassy bushy places, banks. The plant has the grass habit. The stems are ascending, very slender. There are no leaves or tendrils, but grass-like leaf-stalks which are leaflike, or phyllodes, which serve as

leaves. They are long, flat, entire, fine-pointed, with many parallel nerves. The stipules are minute, awl-like. The flowers are erect, crimson or purple, the stalks 1-2-flowered, long, slender. The teeth of the calyx are lance-shaped, the lower longest. The pods are slender, cylindrical, flattened at the border, hairless. The seeds are granulate, round, with a small, oval hilum. The plant is 1-3 ft. high, flowering in May and June, and is a herbaceous annual or perennial.

ORDER ROSACEÆ

Wild Plum (*Prunus domestica*, L.).—The habitat of this species is hedges. The plant has the tree or bush habit. Suckers are produced, but the plant when cultivated is usually grafted. The branches are straight, spineless, downy, the bark brown. The leaves are egg-shaped, elliptic, downy on the ribs below. The flower-stalks are hairless. The fruit, a drupe, is oblong, round to egg-shaped, yellow, or purple, or black. The plant is 6-20 ft. high, flowering in April and May, and is a deciduous tree.

Rubus castrensis, Wolley-Dod.—The habitat of this plant is field and roadside hedges. The habit is arching, prostrate. The stem is olive-green. The prickles are numerous, wide-spreading or bent down, fairly strong. The leaves have lobes radiating from a common centre, with lateral lobes, overlapping, olive-green. The leaflets are coarsely, doubly, or irregularly toothed. The terminal leaflet is nearly round, broadly inversely egg-shaped, oval, with long, blunt, and narrow point, heart-shaped. The panicle is long, cylindrical to pyramidal, loose, the branches wide-spreading, with 1-4 flowers forming a corymb. The sepals are wide-spreading or loosely turned back throughout. The petals are quite white.

Rubus dumetorum, Wh. & N.—The habitat of this plant is hedges, waste ground, &c. The stem and panicle rachis are armed with many unequal, straight prickles, acicles, and gland-tipped organs. The leaflets are usually thick. The stipules are usually narrow. The panicle is long, regular, compound, the rachis hairy, strongly armed like the stem. The petals are large, round, hardly clawed. The fruit is partly imperfect, composed of few large drupelets, and the fruiting sepals are erect or partly spreading. The plant flowers in July and August. It is a deciduous shrub.

Silverweed (*Potentilla anserina*, L.).—The habitat of this plant is waysides, roadsides, damp pastures, and the coast, &c. The habit is prostrate. The plant is stoloniferous, silvery. The rootstock is slender, branched. The leaves are green above, interruptedly pinnate, with stolons from the axils, silvery below. The leaflets are numerous, oblong, deeply toothed, the teeth tipped with silvery hairs, or divided nearly to the base, alternate, close, stalkless, inversely egg-shaped, oblong, blunt. The stipules enclose the buds, and are hooded. The flowers are large, solitary, yellow, on axillary, solitary, slender stalks. The bracteoles are toothed. The achenes are smooth.

The plant is 3-12 in. long, flowering from June to August, and is a herbaceous perennial.

Rosa involuta, Sm.—The habitat of this rose is hedges, banks, bushy places. The plant has the shrub habit. It is intermediate between *R. villosa* and *R. spinosissima*, nearer the former. The plant is small, erect or arching, with short, sometimes arching branches. The prickles are unequal, crowded, straight, or hardly curved, passing gradually into bristles. The leaflets are doubly toothed, downy, glandular sometimes below, or smooth, open. The leaf-stalk and stipules are densely glandular and fringed with hairs. The flowers are 1-3, white or pink. The sepals are persistent, leaflike, simple or pinnate, glandular at the back. The flower-stalk is densely bristly. The fruit is erect, nearly round, with no disk, red, but is not often produced, and ripens late. The plant is 1-5 ft. high, flowering in June and July, and is a deciduous shrub.

Irish Rose (*Rosa hibernica*, Templ.)—The habitat of this rose is hedges and bushy places. The habit is shrub-like, compact, erect. The plant is small, with short branches, which sometimes arch. The prickles are stout, few, scattered, passing into bristles, unequal, the larger curved. The leaflets have simple teeth, hairless or downy below, without glands, bluish-green above, the nerves below and midrib above with few hairs. The leaf-stalk is downy. The stipules are naked on the back, with a fringe of glands on the auricles or lobes. The flowers are pale-pink, up to 12, the stalks naked like the calyx-tube. The sepals are leafy, more or less persistent in fruit, naked on the back. The fruit is erect, nearly rounded, naked, with a small disk, blood-red, pitcher-like, with a narrow mouth, ripening in October. The plant is 1-3 ft. high, and flowers in June and July, being a deciduous shrub.

Rosa suberecta, Ley.—This species occurs in 23 vice-counties, chiefly in North England and Scotland. The leaflets are glandular, nearly hairless or grey-downy, the bracts vinous-red. The leaf-stalk has binate prickles. The fruiting sepals are narrowly egg-shaped, lance-shaped, or pinnate, nearly erect, the stalks and fruit densely bristly. Otherwise it resembles *R. mollissima*, Willd. (= *R. tomentosa*, Sm.), of which it was regarded as a variety.

Rosa andrzejowii, Steven.—The principal prickles of this species are large, sickle-like. The leaflets are broadly elliptical, glandular. The sepals are erect to spreading. The flower-stalks are hairy, glandular. The fruit is globular. The plant is in other respects like *R. tomentosa*, Sm., of which it was regarded as a variety.

Rosa uncinata, Ley.—The thorns of this rose are uncinate, hooked, and stout. The leaflets are hairy both sides, and glandular. The flower-stalks are bristly. The fruit is pear-shaped. The plant is allied to *R. tomentosa*, Sm., of which it was regarded as a variety.

Rosa scabriuscula, Sm.—The prickles of this species are straight, awl-like. The leaflets are variable in shape, nearly hairless above, hairy

principally and only thinly so on the veins below, rough to the touch, and sparingly glandular, or without glands, greener below, large, oblong. The sepals are turned back or rising. The fruit is egg-shaped, oblong, aciculate. The style is hairless. The plant is allied to *R. tomentosa*, Sm., of which it has been regarded as a variety.

Downy-leaved Rose (*Rosa tomentosa*, Sm., pro parte = *R. mollissima*, Willd.).—The habitat of this species is hedges and thickets. The stem is erect. The branches are arching, long, 6-10 ft., the prickles uniform, straight, slightly curved, slender. The leaflets are elliptic, or rather inversely egg-shaped, doubly-toothed, downy, especially below. The flowers are 1-3, white or pink, on long stalks. The sepals are pinnate, not quite persistent, falling as soon as the fruit changes colour, spreading. The fruit does not soon ripen, being bright-red in September, and is oblong, with a distinct but small disk, pitcher-shaped with a narrow mouth. The plant is 3-8 ft. high, flowering in June and July, and is a deciduous shrub.

Rosa farinosa, Bechst.—This species has the leaflets densely grey-downy, glandular below, with compound teeth. The flower-stalk is short and naked. The fruit is naked. The styles are woolly. The plant has been regarded as a variety of *R. mollissima*, Willd., but Major Wolley-Dod does not consider the plant typical in Britain at any rate.

Rosa cinerascens, Dum.—This rose is a bush, 4-5 ft. high, with branches with bluish-green powder. The prickles are straight, swollen below. The leaflets are hairy both sides, simply toothed, egg-shaped, acute, the leaf-stalks glandless, grey-downy (hence *cinerascens*), softly hairy, without prickles. The flowers are few, rose colour, the stalks glandular, hairy. The sepals are spreading, persistent till the fruit is ripe. The fruit is red, nearly globular, egg-shaped, aciculate or smooth. The styles are hairy.

Rosa cuspidatoides, Crépin.—The prickles of this rose are sickle-like. The leaflets are broadly oval, hairy, glandular below. The flowers are rose colour. The sepals are nearly simple. The fruit is nearly rounded, aciculate, as are the flower-stalks, and small. The styles are densely hairy or woolly. This species is allied to *R. mollissima*, Willd., of which it has been regarded as a variety.

Rosa obovata, Ley.—The prickles of this species are strongly curved, slender. The leaflets are inversely egg-shaped, thinly hairy, glandless below, with very sharp double teeth. The flower-stalk is short, naked.

Sweet Briar (*Rosa eglanteria*, L. = *R. rubiginosa*, L.).—The habitat of this plant is hedges, thickets, bushy places. The plant is a small, suberect bush, with erect or arching, compact branches, with many prickles, stout at the base, scattered, the largest hooked, the smaller unequal, awl-like, straight, with glandular hairs and bristles. The leaflets are doubly toothed, densely glandular below, hairless or thinly hairy below, sweet-scented, downy below. The sepals are glandular,

pinnate, somewhat persistent. The flowers are 1-3, rose colour. The flower-stalks are hairy, and the styles also hairy. The fruit is nearly round, egg-shaped, or oblong, pear-shaped at first, with a very small disk, and ripe in October. The plant is 3-6 ft. high, flowering in June and July, and is a deciduous shrub.

Sweet Briar (*Rosa micrantha*, Sm.).—The habitat of this species is hedges and thickets. The stem is suberect, with long, loose, arched branches. The foliage is scarcely scented. The leaflets are rounded below, small, pointed, hairless above, densely glandular below, doubly toothed, hairy in the veins below. The prickles are uniform. The flowers are few, pale, the sepals falling, densely glandular, with a leafy point and 1-2 leaflets. The flower-stalk is usually hairy. The styles are hairless. The fruit is pitcher-shaped to egg-shaped, scarlet, rounded below, with a disk, ripe in September and October. The plant is 3-6 ft. high, flowering in June and July, and is a deciduous shrub.

Rosa Borreri, Woods.—The habitat of this rose is heaths and hedges. In this species, placed by Mr. Druce under *R. obtusifolia*, Desv. (= *tomentella*, Lem.), the leaflets are flat, hairless above, hairy beneath, with obscure glands, larger than in the latter. The leaflets are double-toothed. The bracts are densely fringed with glands, the backs naked. The styles are thinly hairy. The prickles are stout and much hooked. The sepals are naked. The flowers are numerous. The flower-stalk is short, bristly, naked, slightly glandular. The calyx-tube is egg-shaped, naked, the sepals at length spreading or turned back, falling when the fruit ripens.

Rosa dumetorum, Thuill.—The habitat of this species is hedges. The leaflets are green, the terminal one large, with simple teeth, soft, grey-green, thinly hairy both sides, downy below, at least on the midrib. The flowers are pink, rather deep. The flower-stalk is naked, as the leaf-stalk. The styles are softly, not very, hairy. The fruit is nearly round, large, egg-shaped. The plant is 3-6 ft. high, flowering in June and July, and is a deciduous shrub.

Rosa glauca, Vill.—The habitat of this species is hedges, thickets, chiefly in hilly northern districts. The plant forms a compact bush. The rootstock is erect, arched. The leaflets are hairless or hairy, often bluish-green, egg-shaped, simply or doubly coarsely toothed, simple. The prickles are slender, equal hooked. The leaf-stalk is hairless. The flowers are rose-pink. The sepals are ascending after flowering or erect. The flower-stalk is naked, short, nearly hidden by the large bracts. The bracts, stipules, and branches turn red. The styles are woolly, free. The fruit is egg-shaped, pitcher-like, with a narrow mouth, or roundish, ripening in September. The disk is narrow. The plant is 3-8 ft. high, flowering in June and July, and is a deciduous shrub.

Rosa cæsia, Sm.=*coriifolia*, Dr.—The habitat of this plant is hedges, thickets, &c., chiefly in hilly or northern districts. The leaflets are hairy

both sides, softly hairy below, or doubly toothed, grey-green. The flower-stalk is glandular. The stipules and bracts are downy on the back. The fruit is nearly round. The plant is 3-8 ft. high, flowering in June and July, and is a deciduous shrub.

Rosa stylosa, Desv.—The habitat of this species is hedges, chiefly in the south of England. The plant is a tall bush, rarely low, with an erect to arching stem. The root-shoots are erect, arched. The leaflets are usually simply toothed, hairy below, oblong, acute, rounded below. The leaf-stalks are glandular and bristly, like the flower-stalks. The prickles are equal hooked. The flowers are 3-6, pale-pink or white. The sepals are bent back, falling, pinnate, with a tapered point. The styles are hairless, and protrude and fall short of the stamens. The disk is very prominent. The fruit is egg-shaped. The plant is 4-12 ft. high, flowering in June and July, and is a deciduous shrub.

Trailing Rose (*Rosa arvensis*, Huds.).—The habitat of this species is hedges, thickets, and woods. The habit is trailing. The plant is a large bush, with long, arching branches or root-shoots, purple, bluish-green. The prickles are sometimes very large, unequal, those on the ramuli awl-like, stout, strongly hooked. The leaflets are glandless, hairless, or slightly downy, bluish-green below, simply toothed, nearly flat. The flowers are 4-6, white, with a yellow throat. The sepals are naked on the back, short, broad, bent back, falling, simply pinnate, with a short point. The calyx is purple. The flower-stalk is glandular. The style is in a round head, united into an exserted column, hairless, as long as the stamens. The fruit is nearly round, small, with a convex, thickened disk, ripening late. The plant is 2-6 ft. high, flowering from June to August, and is a deciduous shrub.

The French Rose (*Rosa gallica*, L.).—This rose is a bushy shrub. The prickles are unequal. The stipules are narrow. The leaflets are 5-7, leathery, rigid, elliptic. The flowerbud is egg-shaped to round. The flowers are red, crimson, or white, single or double under cultivation. The sepals are spreading during flowering. The fruit is red, nearly round, very leathery. The calyx and flower-stalk are more or less hairy with glandular hairs, and sticky. The plant is 2-3 ft. in height. It flowers in June and July, and is a deciduous shrub. The fruit ripens in August.

Cinnamon Rose (*Rosa cinnamomea*, L.=*R. blanda*, Aiton).—This rose is an alien species, introduced. The stem has deep-red bark, slender, horizontal, or bent-back prickles, unequal, numerous, awl-like. The stipules are oblong, pointed, fringed with glands. The leaflets are oblong, simple, toothed, greyish-green, downy, without glands. The flowers are purplish-red, with broad, hollow petals. The flower-stalks are smooth. The plant is deep-red, egg-shaped or rounded. The plant is 4-5 ft. high, flowering in May onward, and is a deciduous shrub.

Dickson's Rose (*Rosa Dicksonii*, Lindl.).—The

stem of this rose is erect, with spreading wavy branches, dark-red tinged with grey. The prickles are scattered. The leaflets are oval, 5-7, grey both sides, with spreading hairs, doubly toothed. The flowers are deep-pink, the petals not as long as the calyx. The flower-stalks are bristly, enlarged above. The fruit is egg-shaped. The plant flowers in June.

Hawthorn (*Crataegus monogyna*, Jacq., = *C. Oxyacantha*, L.).—The habitat of this plant is hedges, thickets, and forests. The plant has the tree or bush habit. The plant is spinous. It differs from *Crataegus Oxyacanthoides*, already described, in the more deeply lobed, entire leaves, the lobes lance-shaped, narrow, and long-pointed, with narrower segments. The veins of the lower lobes curve outwards. The flowers are in a corymb. The calyx and flower-stalk are downy. The flowers and fruit are not so large, and appear later. There is 1 style, rarely 2, bent. The fruit is nearly round. The plant flowers in May and June, and is a deciduous tree or shrub.

ORDER ONAGRACEÆ

Broad Smooth-leaved Willow Herb (*Epilobium montanum*, L.).—The habitat is shady banks, walls, cottage roofs, dry places, woods, &c. The habit is the rosette habit. The rosettes are stalkless, oblong, fleshy, and the stolons may be subterranean and autumnal. The root is blunt. The stem is erect, hairless, or downy, slender. The leaves are stalked or in whorls of 3, the edges and veins downy, egg-shaped to lance-shaped, oblong, the base rounded, toothed, opposite, hairless. The buds are nodding, egg-shaped. The flowers are pale-purple. The sepals are lance-shaped. The lobes of the stigma are 4, short, not rolled back. The capsule is finely downy. The plant is 6-24 in. high, flowering in June and July, and is a herbaceous perennial.

Lanceolate Willow Herb (*Epilobium lanceolatum*, Sebast. et Maur.).—The habitat of this plant is roadsides, dry stony places, garden walls, &c. The habit is as in the last. The root is blunt. The stolons are autumnal, the leaves in loose rosettes, spreading. The stem is obscurely angled, round, erect, branched, downy, the hairs short, bent back. The leaves are oblong, lance-shaped, opposite below, toothed, alternate, stalked, narrowed to the base, the lower pairs limp, drooping. The buds are inclined, egg-shaped. The leaf-stalk ends in obscure lines running down the stem. The flowers are numerous, pale-rose. The sepals are broadly linear, with a long narrow point. The stigma lobes are 4, short, and spreading. The capsule is finely downy. The seeds are tubercled, inversely egg-shaped to oblong, nearly acute below. The plant is 9-24 in. high, flowering from July to September, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

Corn Parsley (*Carum segetum*, Benth. and Hook. fil.).—The habitat of this plant is hedgebanks,

waste places, damp calcareous fields, and near the sea. The plant has the rosette habit, with radical leaves. The stem is smooth, erect, branched, rounded, nearly leafless above, finely furrowed, solid. The lower leaves have lobes each side of a common stalk, and are oblong, the leaflets nearly stalkless, egg-shaped, lobed, scalloped, coarsely toothed. The upper leaves are entire or divided into three. The flowers are whitish, in a drooping umbel, small, and irregular, the rays unequal. The bracts and bracteoles are linear or awl-like. The general involucle consists of 1-2 bracts. The fruit is egg-shaped. The styles are short and erect. The plant is 1-3 ft. high, flowering from June to September, and is a herbaceous perennial, annual, or biennial.

Hedge Honewort (*Sison Amomum*, L.).—The habitat of this plant is hedgebanks, moist places, damp places on a calcareous soil. The plant is similar to the last in habit, &c., but the radical leaves are larger and more coarsely toothed. The root is spindle-shaped. The stem is erect, branched, panicled, slender, leafy, solid. The radical leaves have lobes each side of a common stalk, the upper are divided into narrow lobes, and the leaflets are oblong, toothed, cut. The flowers are small, white, in compound, irregular, terminal or axillary umbels, with few, slender, unequal rays. The bracts and bracteoles are 2-4, short, awl-like. The petals are inversely heart-shaped, with a deep notch, the point long, hooded. The styles are short, bent back. The lobes of the disk are thick, depressed. The plant is 2-3 ft. high, flowering late in August, and is a herbaceous biennial.

Great Burnet Saxifrage (*Pimpinella magna*, L.).—The habitat of this plant is bushy waste places, shady hills, and woods. The habit is erect. The stem is angular, leafy, finely furrowed. The leaves all have lobes each side of a common stalk, the leaflets egg-shaped, toothed, cut, the terminal one 3-lobed, the lateral 3-lobed, broad, membranous, those of the radical leaves egg-shaped, nearly heart-shaped, of the stem-leaves narrower. The radical leaflets are stalked. The flowers are white, in a broad umbel, the outer flowers complete, the inner male. The styles are longer than the ovary, or as long as the fruit, which is oval. The plant is 1-4 ft. high, flowering in July and August, and is a herbaceous perennial.

Wild Chervil (*Chaerophyllum temulum*, L.).—The habitat of this plant is fields, banks, roadsides, hedges, and waste places. The habit is erect, the stem being swollen below each node, spotted with purple, stiffly hairy, branched, grooved, solid, round and rough below, the hairs above bent downwards. The leaflets are egg-shaped, entire, the leaves triangular, bipinnate. The flowerheads are wide, with small, white florets. The short, spreading styles equal the fleshy disk on the top of the ovary. The fruit is egg-shaped, flattened upwards. The plant is 1-3 ft. high, flowering between April and July (I have found it in flower as late as November), and is a herbaceous perennial or biennial.

BRITISH FLORA

Beaked Parsley (*Anthriscus vulgaris*, Bernh. = *Anthriscus scandix*, Beck.).—The habitat of this plant is hedgebanks, roadsides, sunny places on dry soil. The habit is erect. The stem is branched, hairless, leafy, hollow, swollen below the nodes. The leaves are thrice pinnate, the leaflets are egg-shaped, divided nearly to the base, the segments are short, blunt, slightly hairy. The flowers are small, in lateral, stalked umbels, the rays unequal. There are no bracts, short, oblong bracteoles. The partial involucre consists of a few leaflets fringed with hairs. The fruit is egg-shaped, hairy, with hooked bristles, the beak short, smooth. The ultimate flower-stalks have a ring of hairs. The styles are short. The plant is 1-3 ft. high, flowering in May and June, and is a herbaceous biennial.

Wild Chervil (*Anthriscus sylvestris*, Hoffm.).—The habitat of this plant is hedgebanks, hedges, and banks, woods, and shaded places. The habit is erect. The stem is branched, hairy below, smooth above, stout, erect, hollow, furrowed, leafy, swollen below the nodes. The leaves are twice to thrice pinnate, the leaflets are divided nearly to the base. The bracteoles are oblong, lance-shaped, fringed with hairs, green, spreading or turned back, pink. The flowers are white, in terminal stalked umbels, drooping at first, with a partial involucre of several leaflets, egg-shaped, lance-shaped, fringed with hairs. The petals are oblong, inversely egg-shaped, hardly notched, hooded. The fruit is smooth, shining, narrowed to the tip. The plant is 2-3 ft. high, flowering from April to June, and is a herbaceous perennial.

Great Hartwort (*Tordylium maximum*, L.).—The habitat of this plant is hedgebanks, waste places. The plant is of erect habit. The plant is hairy with short hairs turned back on the stem, which is slender, erect, hollow, grooved. The leaves are pinnate. The leaflets are in 1-3 pairs, deeply divided nearly to the base, oblong-lance-shaped, cut, toothed, the leaf-stalk sheathed. The bracts and bracteoles are short and stiff, 6-8. The flowers are stalkless, pink, in a small, crowded umbel, with 6-8 rays, stout, short, hairy. The partial involucres are linear, shorter than the umbel. The outermost petals are radiant, with 2 equal lobes. The fruit is hairy, the margin scalloped, hairless, thickened, oblong. The styles are short, stiff, and erect. The plant is 1-2 ft. high, flowering from June to July, and is a herbaceous perennial.

ORDER RUBIACEÆ

Ladies' Bedstraw (*Galium verum*, L.).—The habitat of this plant is sandy banks, shores, pastures, downy, dry sandy places, &c. The habit is erect or ascending. The stem is branched, rather woody, 4-angled, sometimes downy. The leaves are 8, in a whorl, linear, awl-like, with the margins rolled back, rough above, bluntly pointed, bent back, channelled above, downy below. The flowers are golden-yellow, in numerous small, dense, compound panicles, nearly terminal or axillary, in a sort of spike. The petals are blunt,

with a short point. The fruit-stalks are spreading. The fruit is small, black, smooth. The plant is 1-2 ft. high, flowering from June to September, and is a herbaceous perennial.

Crosswort (*Galium Cruciatum*, Scop.).—The habitat of this plant is hedges, roadsides, and copses. The habit is prostrate, then ascending. The root-stock is creeping. The stem is simple above, slender, branched below. The leaves are 4, in a whorl (hence *Cruciatum* and Crosswort), hairy both sides, elliptic to oblong, egg-shaped, 3-nerved. The flowers are in axillary cymes, with bracts, the flowers terminal, complete, few, on short stalks, the outer male, 8, in a corymb, not so long as the leaves. The fruit is rounded, with the stalk bent back. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Great White Bedstraw (*Galium Mollugo*, L.).—The habitat of this plant is hedges and copses. The habit is prostrate, then ascending. The stem is branched, 4-angled, thickened at the nodes, limp, hairless or hairy. The leaves are 6-8, in a whorl, inversely egg-shaped, lance-shaped, oblong, with a blunt point, the margins rough, with erect or forwardly-directed prickles, slightly translucent, veined, hardly separate below, the leaves on the main stem horizontal or bent down. The flowers are small, white, numerous, in horizontal or bent-down cymes, the branches of the panicle broad and spreading. The petals are slightly hooded. The fruit-stalks are spreading. The fruit is black, shagreened, hairless. The styles are nearly free. The plant is 1-4 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER DIPSACEÆ

Shepherd's Rod (*Dipsacus pilosus*, L.).—The habitat of this plant is moist hedges, banks, and shady places. The habit is erect. The stem is slender, rough, branched, leafy, and the ribs have short, soft, hair-pointed prickles. The leaves are stalked, with a pair of basal leaflets, the radical hairy, scalloped, the stem-leaves oblong, scalloped, toothed. The white florets form a hairy, rounded head, drooping in bud, longer than the involucle, the numerous linear, pointed, hairy bracts bent down. The scales of the receptacle are inversely egg-shaped, hooked, blunt-pointed. The involucel, calyx-tube, and corolla are white, and very hairy. The plant is 2-4 ft. high, flowering in August and September, and is a herbaceous perennial or biennial.

ORDER COMPOSITÆ

Feverfew (*Chrysanthemum Parthenium*, L.).—The habitat of this plant is hedges, hedgebanks, and waste places. The habit is erect. The plant is strong-scented. The stem is downy, branched above, furrowed, panicled. The leaves are stalked, pinnate, light-green, with egg-shaped, blunt, cut lobes, deeply divided nearly to the base. The flowerheads are numerous, corymbose. The disk is yellow, the ray white or absent. The receptacle

is hemispherical. The phyllaries are blunt, linear. The ligules are short and broad. The bracts have a membranous border, broad, ribbed, downy. The fruit is crowned with a short, jagged membrane, the disk cup-shaped. The plant is 1-3 ft. high, flowering from July to September, and is a herbaceous perennial.

Mugwort (*Artemisia vulgaris*, L.).—The habitat of this plant is hedges, hedgebanks, waste places. The habit is erect, pyramidal. The plant is strong-scented. The stem is reddish, angled, grooved, branched, leafy. The leaves are broad, woolly, white below, dark-green above, deeply divided nearly to the base, the lobes broad, lance-shaped, long and narrow-pointed, cut and toothed, acute, the margins bent back. The leaf-stalks are auricled. The flowerheads are few, reddish, or yellowish-brown, or creamy-white, crowded, in short, erect panicles, egg-shaped, leafy, simple. The receptacle is hairless. The corollas of the ray florets are cylindrical, slender. The phyllaries are woolly. The plant is 1-4 ft. high, flowering from July to September, and is a herbaceous perennial.

Welted Thistle (*Carduus crispus*, L.).—The habitat of this plant is hedgebanks, waysides, dry banks, and waste places. The habit is erect. The stem is winged, the wings narrowed, wavy, cottony or downy above, the branches ascending. The leaves run down the stem below, are fringed with spines which serve as a protection, lance-shaped, cottony below or hairless, deeply divided nearly to the base, the lobes divided into 3 nearly to the base, toothed. The flowerheads are round, clustered, small, erect, the florets purple or white. The flower-stalks are leafy. The involucre is webbed, egg-shaped, the phyllaries linear, awl-like, erect or ascending, slender, not contracted above the base. The fruit is pale, shining, furrowed. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous biennial or annual.

Hawkweed Oxtongue (*Picris hieracioides*, L.).—The habitat of this plant is dry banks, hedgebanks, dry sunny places, waste places on a stiff soil. The habit is erect. The plant is hairy with short, stiff, straight, curly or hooked hairs. The stem has irregularly spreading branches, and is stout and rough. The leaves are linear-lance-shaped, wavy, toothed, narrow, the lower stalked, the upper clasping. The flowerheads form a corymb, and are solitary, terminal, on the stem and branches. The flower-stalks bear bracts. The florets are yellow. The outer phyllaries are narrow, loose, oblong, smooth at the border, with a bristly keel, and the involucre more or less bell-shaped. The fruit is not beaked, the pappus whitish. The plant is 1-3 ft. high, flowering between July and September. It is a herbaceous biennial.

Oxtongue (*Picris echioides*, L.).—The habitat of this species is hedges, pathways, hedgebanks, ditches, borders of fields, and waste places on a stiff soil. The habit is as in the last. The stem is erect, branched, stout, hairy, the bristles 3-fid,

rigid, hooked, and tuberculate at the base. The radical leaves are stalked, wavy, toothed, the upper heart-shaped, clasping, oblong, lance-shaped. The flowerheads are large, the florets yellow. The flower-stalks are stout, stiff, enlarged, spreading, naked. The involucre is hemispherical, bristly. The outer bracts are leaflike, heart-shaped, the inner long, narrow-pointed. The ligules are short. The fruit is shortly, narrowly beaked, reddish-brown, angular. The pappus is snowy-white. The plant is 1-3 ft. high, flowering between June and October, and is a herbaceous annual.

Hieracium surrejanum, F. J. Hanb.—The habitat of this species is sandy hedgebanks. The stem is usually simple, finely furrowed, reddish, hairy below, woolly-felted, stiffly hairy above. The earlier radical leaves are not persistent, oblong to elliptic, the later broad to egg-shaped, blunt, narrowed below, toothed, the inner egg-shaped to lance-shaped, blunt, wedge-shaped below, purplish, stiffly hairy below and on the border. The stem-leaves are 2-5, the lower stalked, egg-shaped, oblong to lance-shaped, the upper blunt, narrowed to the nearly stalkless base, toothed. The panicle has 1-2, erect, spreading, 2-3-flowered branches in a corymb, the upper arching, exceeding the accladum. The 3-7 heads are broad, egg-shaped. The flower-stalks are woolly-felted, hairy, glandular. The phyllaries are dark, the outer linear, acute, the inner broader, lance-shaped to oblong, narrow above, blunt, with a pale border, woolly-felted, glandular, hairy. The ligules are hairless. The styles are yellow. The plant is 1-2 ft. in height, flowering in June, and is a herbaceous perennial.

Acrid Lettuce (*Lactuca virosa*, L.).—The habitat of this plant is hedgebanks, dry banks, and waste places. The habit is erect. The stem is leafy, branched above, panicled, rough. The plant is bluish-green, full of milky acrid juice, which serves to protect it. The leaves are spreading, the radical leaves inversely egg-shaped, oblong, toothed, wavy, stalked, with black spots, the stem-leaves clasping, with auricles, pointing downwards, hardly narrowed below. The flowerheads are pale-yellow, scattered, with few, green, red-tipped, acute, heart-shaped bracts, rarely with the lobes pointing backwards. The panicle branches are long-spreading. The flower-stalks are slender and bear bracts. The involucre is narrow, conical. The fruits are black, beaked, the beak as long as the fruit, with a cellular wing, and ribbed faces. The pappus is white, slender. The plant is 2-4 ft. high, flowering in July and August, and is a herbaceous biennial.

ORDER BORAGINACEÆ

Gromwell (*Lithospermum officinale*, L.).—The habitat of this plant is hedgebanks, woods, thickets, copses, dry and stony places. The habit is erect. The rootstock is woody, stout, whitish. The stems are tall, numerous, branched, rough, the hairs tuberculate at the base, leafy. The leaves are rough, green above, paler below,

downy above, half-clasping, narrow to lance-shaped, acute, veined, roughly hairy, the bristles closely pressed and bulbous above. The nearly stalkless flowers are greenish, yellowish-white, in a small cyme, the throat of the corolla having small scales. The bracts are longer than the calyx, which is as long as the corolla. The 1-2 nutlets are white, hard, stony, smooth, shining, narrowed above. The plant is 1-3 ft. high, flowering from July to September, and is a herbaceous perennial.

ORDER SCROPHULARIACEÆ

Cornish Moneywort (*Sibthorpia europaea*, L.).—The habitat of this plant is damp, shady places, and banks in the S. and S.W. The habit is trailing, prostrate. The stem is creeping, thread-like, slender, the hairs limp and jointed. The leaves are alternate, round to kidney-shaped, 7-9-lobed, the lobes broad, rounded, notched, long-stalked, scalloped. The flowers are small, pink, solitary, in the axils, on short stalks. The calyx and corolla are 5-lobed, the sepals lance-shaped, 2 of the petals yellowish. There are 4 stamens. The capsule is very small. The plant is 6-12 in. long, flowering from June to September, and is a herbaceous perennial.

ORDER LABIATÆ

Black Horehound (*Ballota nigra*, L.).—The habitat of this plant is hedgebanks, roadsides, and waste places. The habit is erect. The plant is coarsely hairy, hoary or woolly-felted, dull-green, foetid, with pungent odour. The stem is stout, branched, with bent-back hairs. The upper leaves are egg-shaped, stalked, the lower heart-shaped, scalloped, lobed. The bracts are leaflike, linear, awl-like. The bracteoles are small. The flowers are pale reddish-purple, 3-6, stalkless, in many-whorled, stalked cymes. The calyx is funnel-shaped, the teeth broadly egg-shaped, short, spreading or bent back, with a long, narrow point, enlarged in fruit. The tube is cylindrical, ribbed, the limb is short, expanded, with 5 teeth, nerved, spiny. The upper lip of the corolla is hairy inside and out. The middle lobe of the inner lip is inversely heart-shaped. The nutlets are bluntly 3-angled, brown, smooth, shining. The plant is 1-3 ft. high, flowering from June to October, and is a herbaceous perennial.

ORDER POLYGONACEÆ

Climbing Bush Knotweed (*Polygonum dumetorum*, L.).—The habitat of this plant is hedges, thickets in the S. The habit is climbing, twining. The stem is wiry, furrowed, round or angled. The leaves are heart-shaped, arrow-shaped. The outer perianth-segments are broadly winged. The flower-stalks are hair-like, slender, jointed below the middle. The nut is small, smooth, highly polished. The plant is 2-3 ft. high, flowering between July and September, and is a herbaceous annual.

Rumex acutus, L. (= *R. pratensis*, Mert. et Koch).—The habitat of this species is roadsides, marshy places. It is similar in habit to *R. obtusifolius*, with narrower leaves. The stem is tinged with red. The radical leaves are linear, oblong to lance-shaped, wavy, heart-shaped below, acute. The panicle is leafy below, the whorls close, not crowded. The inner fruiting sepals or perianth-segments are unequal, heart-shaped, triangular, shortly toothed below, with a small, entire, triangular point, the upper tubercled, the tubercle egg-shaped or lance-shaped. The anthers are white before they open. The nutlets are numerous, elliptic. The plant is 2-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Blood Dock (*Rumex sanguineus*, L.).—The habitat of this species is roadsides, hedges, wooded places, waste places. The habit is as in the last. The stem is slender, ascending, simple or little branched. The leaves are egg-shaped, lance-shaped, the lower heart-shaped, fiddle-shaped, a little wavy, with red nerves. The leaf-stalk is black, short. The panicle is leafy below, loose, with distant, many-flowered whorls. The flower-stalks equal the perianth-segments, and are jointed below. The inner fruiting sepals are oblong, blunt, with a round base, entire, one, the outer, larger, with a large bright-red, smooth, nearly round tubercle, broadest above the middle. The nut is brown, drooping, egg-shaped to elliptic, shining. The plant is 1-3 ft. high, flowering between July and October, and is a herbaceous perennial.

Monk's Rhubarb (*Rumex alpinus*, L.).—The habitat of this plant is roadsides, near cottages. The habit is as in the last. The rootstock is stout. The plant is downy, with cellular hairs. The stem is stout. The leaves are broadly egg-shaped or rounded to heart-shaped, blunt, with wavy borders, the upper egg-shaped. The leaf-stalk is long, stout, channelled. The panicle is leafy below, with numerous, erect branches, the whorls crowded, numerous. The inner fruiting sepals are triangular to egg-shaped, net-veined, membranous, entire or toothed, with no tubercles. The flower-stalks are twice as long, jointed below the middle. The nut is elliptic, grey. The plant is 2-4 ft. high, flowering in July, and is a herbaceous perennial or biennial.

ORDER URTICACEÆ

Hop (*Humulus Lupulus*, L.).—The habitat of this plant is hedges and copses. The habit is twining, climbing, and the plant is rough. The rootstock is stout, branched. The stem is tall, almost prickly, tough. The branchlets are hairless. The leaves are stalked, heart-shaped, opposite, smooth above, rough below, 3-5-lobed, the lobes acutely toothed, egg-shaped, toothed, the uppermost egg-shaped. The male flowers are loosely panicled, the female on curved flower-stalks, in fruit yellow, egg-shaped, globular, with egg-shaped scales, the scales rounded, glandular, resinous, like the fruit and bracteoles. The fruit is dry, with pendulous seeds. The plant is climbing, revolving to the

right, a revolution taking 2 hours. It is 4-12 ft. high, flowering from July to September, and is a herbaceous perennial.

ORDER SALICACEÆ

Black Poplar (*Populus nigra*, L.).—The so-called *Populus nigra* has recently been found to have been generally confounded with the Canadian Black Poplar, which is extensively planted in this country (*Populus monilifera*). The latter has the leaves broadly triangular, and greyish-green. The trunk is much smoother, the branches curve upwards. The leaf-buds are sticky. The catkins are loose. In the true *P. nigra* the leaves are triangular with a long point, smooth below, and yellowish-green. The young buds are sticky. The branches spread horizontally. The trunk has rough bosses. The style is 2-lobed at the apex. The catkins are loose. The habitat is hedgerows. The tree grows to a height of 60-90 ft., and flowers in April and May.

ORDER LILIACEÆ

Field Garlic (*Allium oleraceum*, L.).—The habitat of this plant is borders of fields and waysides. The habit is as in the last. The stem is leafy below. The leaves are almost flat, channelled, keeled below, the ribs rough, fleshy, thick, and solid. The scape is cylindrical half-way up, sheathed by the leaves, and slender. There are 2 spathes, unequal, with a slender beak. The umbellated head is loose, with bulbils, the flower-stalk wavy, spreading. The perianth is bell-shaped, with blunt segments, pale-brown or greenish-pink. The stamens are as long as the perianth, or shorter, or included. The anther-stalks are awl-shaped, united below for a short distance. The Field Garlic is 10-18 in. in height. It flowers late in July and August, and is a herbaceous perennial.

Garlic (*Allium carinatum*, L.).—The habitat of this plant is banks, &c. The habit is of the usual garlic type, lily-like or grass-like. The stem is leafy below, the leaves furrowed with 3-5 furrows below, linear, flat above, sheathing the scape, which is cylindrical to the middle, erect. The scape is umbellated, bearing few, if any, bulbils, and there are 2 spathes, with unequal long beaks. The perianth-segments are blunt, the flowers rose-coloured. The stamens project, being twice as long as the perianth-segments when ripe. The plant is 6-15 in. in height. It flowers in July and August. The plant is a herbaceous perennial.

Narrow-leaved Ramsons (*Allium triquetrum*, L.).—The habitat of this plant is hedgebanks and meadows. The habit is lily-like. The bulb is egg-shaped, small. The stem is 3-sided. The

leaves are radical, linear, flat, sharply keeled, bent back, or the margin rolled back, angularly folded, acute. The scape is 3-sided. The spathe is 2-valved, lance-shaped. The head is loose-flowered. The perianth is bell-shaped. The segments with a green midrib are linear-oblong, the stalks curved, the tip club-shaped. The flowers are drooping, white, arranged one side of the stalk, without bulbils. The stamens are short, half as long as the perianth, free, and included, the anther-stalks slender. The stigmas are distinct, thread-like. The plant is 6-18 in. high, flowering in April till June, and is a herbaceous perennial.

ORDER ARACEÆ

Arum (*Arum italicum*, L.).—The habitat of this plant is banks in the south-east of England. The habit is like that of Cuckoo-pint. It is larger and stouter than the latter. The leaves are yellowish, veined, dark-green, more triangular, with spreading lobes, blunt, appear before the winter, and are all radical. The leaf-stalk is longer than the limb. The spathe, swollen below, nearly flat, broad above, falls over as soon as it expands, closing the opening like a flap, and is three times the length of the spadix, which is club-shaped and yellow. The pistillodes or functionless pistils are long above and below the stamens. The berries are longer and the seeds larger than in the Cuckoo-pint. The plant evolves greater heat than the temperature of the surrounding atmosphere, the spathe being at 40°-44° C. when the atmosphere is 15° C. The plant is 6-12 in. high, and flowers in May and June, being a herbaceous perennial.

ORDER GRAMINACEÆ

Meadow Brome Grass (*Bromus mollis*, L.).—The habitat of this plant is roadsides, fields, and waste places, &c. The plant has the grass habit. The plant is softly downy (hence *mollis*). The stems are rounded. The leaves are broad, soft, with rough edges. The sheaths are round, softly hairy. The ligule is short. The flowers are in an erect or nodding, rigid, egg-shaped panicle, close, branched, nearly simple. The spikelets are flattened at the border, egg-shaped, oblong, with conical tips, downy. The empty glumes are egg-shaped, acute, with strong nerves. The florets are closely overlapping as long as the straight awn. The flowering glumes are 6-10, downy, falling, broadly and bluntly angled above the middle, opaque. The top of the upper glume is half-way to the top of the sixth floret. The anthers are three times as long as broad. The plant is 1-3 ft. high, flowering from May to August, and is a herbaceous annual.

FLOWERS OF THE HILLS, DRY PLACES, ETC.

[The plants included in this section are usually montane species, but altitude is not the only factor, and the relative moisture is equally important. The species here included are chiefly those that occur on dry hills, where the soil is fairly deep, and the Alpine species which require less soil and moister conditions are included in the last section, which comprises plants more allied to species that grow on rocks or on walls, &c.]

ORDER RANUNCULACEÆ

Meadow Rue (*Thalictrum minus*, L.).—The habitat of this plant is dry and rocky places. The plant has the erect habit, and is inversely pyramidal. The stem is solid, smooth or finely furrowed, sheathed below, rigid, zigzag, furrowed when dry, leafless, branched. The leaves are triangular, 3-4 times pinnate, 3-cleft, bluish-green, the leaflets roundish, acutely or bluntly lobed. The stipules are parallel with the leaf-stalk, with spreading or bent-back auricles. The branches are angular, ascending. The flowers are drooping, greenish-yellow, in a loose, branched panicle, with 4 yellow-green sepals. The anthers are apiculate. The achenes are fusiform, stalkless, elliptic to oblong, straight or swollen below, 8-ribbed, more or less flattened at the border. The plant is 3 in. to 2 ft. high, flowering in July and August, and is a herbaceous perennial.

Pasque Flower (*Anemone Pulsatilla*, L.).—The habitat of this species is chalky downs, limestone pastures, &c. The habit is erect. The plant is silky. The rootstock is stout and woody. The leaves mature after flowering, and are 3 times divided nearly to the base, with linear segments. The involucral leaves are silky, stalkless, divided nearly to the base, with long, linear segments. The flowers are solitary, bell-shaped, drooping in bud, erect later, dull-purple, silky outside. The sepals are 6, erect, silky, petaloid. The flower-stalk lengthens after flowering. The outer stamens are yellow, reduced to glands, and may be reduced petals, the imperfect ones containing honey. The achenes have long, feathery tails. The plant is 5-8 in. high, flowering in April and May, and is a herbaceous perennial.

Crowfoot (*Ranunculus chærophylloides*, L. = *R. flabellatus*, Desf.).—The habitat of this species is hedgebanks and dry banks. The habit is erect. The root consists of short, egg-shaped knobs and fibres. The stoles are slender with small scales which give rise to a new plant. The stem is generally simple, slender, swollen below, silky, hairy, with tuberous offsets. The leaves are hairy, 3-foliate. The radical leaves are 3-lobed, with 3-7 divisions. The stem-leaves are 1-2, with

linear segments. The flowers are bright-yellow. The receptacle is smooth, oblong. The calyx is hairy, spreading. The flower-stalks are furrowed. The achenes form a head, and are hairy, flattened at the border, acute, dotted, oblong, cylindric, numerous, rounded, with an acute beak, rough, small. The plant is 4-12 in. high. It flowers in May, and is a herbaceous perennial.

Small-flowered Crowfoot (*Ranunculus parviflorus*, L.).—The habitat of this plant is fields, banks, roadsides, cornfields, and dry banks. The habit is prostrate. The root is fibrous. The stems and branches are slender, spreading. The leaves are rounded or kidney-shaped, 3-5-lobed, the lobes toothed, the upper leaves oblong, entire, or 3-lobed, with entire, deeply-cut lobes, the lowest entire. The flower-stalks are lateral, opposite a leaf or in the forks, furrowed. The flowers are yellow, with 3-5 small, narrow, oblong petals, the gland with small scale. The calyx is erect at first, afterwards turned back. The receptacle is hairless. The achenes are small, rounded, with hooked tubercles. The styles are nearly straight, and short. The plant is 3-12 in. long, flowering in May and June, and is a herbaceous annual.

ORDER CRUCIFERÆ

Wall Cress (*Arabis hirsuta*, Br.).—The habitat of this plant is dry banks, rocks, walls, dry places generally. The habit is the rosette habit. The stems are hairy (hence *hirsuta*), with hairs closely pressed, the hairs simple, spreading, leafy, slender, numerous. The radical leaves are more or less narrowed below, shortly-stalked, toothed, the stem-leaves stalkless, or half-clasping, blunt, with spreading auricles, or heart-shaped below. The flowers are small, white, the petals spreading. The pods are erect, narrow, slender, straight, closely pressed. The style is short. The seeds are distant, with a narrow wing. The plant is 9-18 in. high, flowering from June to August, and is a herbaceous biennial.

Alpine Scurvy Grass (*Cochlearia alpina*, Wats. = *C. grænlandica*, Sm.).—The habitat of this plant is mountains. The plant was formerly regarded as a sub-species of *C. officinalis*. It has more

or less the rosette habit. It is a more slender plant, with smaller leaves. The radical leaves are broadly heart-shaped, blunt, entire or rather obscurely lobed, the upper stem-leaves triangular, clasping, 3-lobed, or broadly egg-shaped, with 4-6 teeth. The pods are rhomboid to oblong, narrowed both ends, inversely egg-shaped. The style is short. The plant is 4-12 in. high, flowering from June to August, and is a perennial or biennial.

Cochlearia micacea, E.S.M.—The habitat of this species is high Scottish mountains. The plant is regarded as a variety of the last. It differs in being a small, prostrate plant. The leaves are small. The pod is narrower, 1½-3 times as long as broad. The plant is 2-4 in. high, flowering from June to August, and is a herbaceous biennial.

Teesdale's Cress (*Teesdalia nudicaulis*, Br.)—The habitat of this species is sandy and gravelly places. The plant has the rosette habit. The stems are numerous, or solitary, slender, ascending, with one or two small leaves. The leaves are radical, numerous, flat, divided nearly to the base, the lobes larger upwards, or rounded, spoon-shaped, entire. The flowers are white, in a corymb, then a raceme, the 2 outer petals twice as long as the rest, unequal. The stamens bear scales. The style is very short. The pods are notched, winged, on short, slender, spreading stalks. The plant is 5-12 in. high, flowering in June and July, and is a herbaceous annual.

ORDER RESEDACEÆ

Wild Mignonette (*Reseda lutea*, L.)—The habitat of this species is chalky and sandy fields, limestone tracts, waste places. The habit is erect. The stem is smooth, branched, ribbed. The leaves are divided nearly to the base, 2-3-lobed, the lobes few, distant, blunt, linear. The flowers are in a dense raceme, conical, pale-yellow. The sepals and petals are unequal. The 5 sepals are linear, the upper smaller. The 6 petals are unequal. The 3 upper petals have wing-like lobes, the claw is 2-lobed, the limb 3-lobed, the lateral 2-lobed with 1 wing, the lower nearly entire, protecting the honey. There are 3 stigmas. The capsule is oblong, wrinkled, 3-toothed. The seeds are black, smooth, shining, inversely egg-shaped. The plant is 2 ft. high, flowering from June to August. The plant is a herbaceous biennial.

ORDER CISTACEÆ

White Rock Rose (*Helianthemum polifolium*, Mill.)—The habitat of this species is stony places, slopes near the base of hills. The habit is trailing, prostrate, shrubby. The stem is branched, prostrate, hoary, downy both sides, with stipules. The leaves have bent or rolled-back margins, and are opposite, with stipules, egg-shaped to oblong, linear. The flowers are white, in racemes, with bracts on the stalks. The sepals are downy, the inner blunt. The style is bent below, longer than

the ovary. The plant is 8-10 in. high, flowering from May to July, and is a perennial undershrub.

Spotted Rock Rose (*Helianthemum guttatum*, Mill.)—The habitat of this plant is stony, heathy places. The habit is erect. The stem is hoary or downy, simple or forked, and branched from the base, without bracts. The leaves are oblong to lance-shaped, linear, the lower leaves are opposite, the upper alternate, with stipules. The flowers are yellow, with deep-red or chocolate spots below (hence *guttatum*). The petals are wedge-shaped. The fruit-stalks are spreading, without bracts. The stigma is nearly stalkless. The plant is 4-12 in. high, flowering between May and August, and is a herbaceous perennial.

Hoary Rock Rose (*Helianthemum canum*, Baumg. = *H. marifolium*, Mill.)—The habitat of this species is dry banks, rocks, limestone rocks. The habit is prostrate, shrubby. The stem is woody, much-branched, hoary (hence *canum*), with stipules. The leaves are hoary both sides, or hairy above, egg-shaped, oblong, stalked, flat, opposite. The flower-stalks bear bracts. The flowers are few, small, yellow, in terminal racemes with bracts. The style is twisted below, bent back at the tip, bent in, longer than the stigma. The anthers are notched both ends. The plant is 6-8 in. long, flowering from May to July, and is a perennial shrub.

ORDER VIOLACEÆ

Viola calcarea, Greg.—The habitat of this violet is calcareous ground. The plant was formerly regarded as a variety of *Viola hirta*. It is small, glabrous, without stolons. The rootstock is branched, thick, woody. The leaves are small, egg-shaped, oblong, heart-shaped. The flower-stalks are longer than the leaves. The flowers are very small, violet or mauve, the throat the same. The petals are narrow, the 4 upper forming a St. Andrew's cross, the sepals oblong to egg-shaped. The spur is very short, straight, conical. The capsule is small, roundish, depressed. It is a herbaceous perennial plant, flowering in April and May.

Sand Violet (*Viola arenaria*, D.C. = *rupestris*, Schmidt)—The habitat of this species is elevated calcareous pastures. The habit is tufted. The rootstock is thick, woody, brown, clothed with bases of earlier leaves. The stipules below are small and narrow, nearly entire, the upper ones longer, broader, hairy. The leaves are short-stalked, rounded, kidney-shaped, broadly heart-shaped, with a short point, thick, dotted, nearly entire. The flowers are large, blue, the anterior petal long, narrow, notched, with a blunt point. The spur is short, thick, furrowed. The sepals are hardly acute. The bracts are slender, entire, or above the curvature of the flower-stalk. The anther-spurs are very slender, sickle-like, as long as the anther, which has a blunt scale. The capsule is downy. The plant is 1-3 in. high, flowering in May, and is a herbaceous perennial.

Viola lutea, Huds.—The habitat of this species

is mountain pastures, hilly districts. The plant has been regarded as a sub-species of *V. tricolor*, L. The habit is ascending. The stem is branched and thread-like underground. The rootstock is slender, branched, the branches slender, with short stems and underground runners. The leaves are scalloped, toothed, the lower egg-shaped or lance-shaped. The stipules are lobed, linear, 3 lateral one side, 1 on the other, the middle one entire and larger, divided nearly to the base, the lobes radiating from a centre. The flowers are all yellow (hence *lutea*), the petals spreading, longer than the sepals. The capsule is round. The plant is 4-9 in. high, flowering from June till August, and is a perennial at high elevations or annual.

ORDER POLYGALACEÆ

Polygala oxyptera, Reichb.—The habitat of this species is limestone and chalky soils, sandy shores. The habit is prostrate. The branches are wavy, the leaves linear, the inner sepals wedge-shaped below, shorter and narrower than the capsule. The flower-stalks are hairless, with smaller flowers, usually blue. The plant is 1-6 in. high, flowering from June to August, and is a herbaceous perennial.

Polygala austriaca, Crantz.—The habitat of this species is chalk downs. It differs from *P. amara*, L., in the colour of the flowers, which are very small, dull-blue or bluish-white. The capsule is rounded below, narrowed to the base, and the leaves are less fleshy. The plant is 1-3 in. high, flowering in June, July, and is a perennial.

Chalk Milkwort (*Polygala calcarea*, E. Schulz).—The habitat of this species is dry soil and rocks, chalk hills. The habit is the rosette habit. The stem is weak, prostrate or ascending, nearly naked below, branched, the many branches rooting and proliferous, spreading in an umbel-like manner from the root. The radical leaves are in an irregular rosette, large, egg-shaped, blunt, those of flowering stems short, smaller, lance-shaped, elliptic. The stem-leaves are oblong. The flowers are blue. The calyx-wings are oblong or inversely egg-shaped, larger than the fruit, the veins branched, the lateral looping, with a branch above the middle of the central vein. The capsule is oblong, inversely heart-shaped. The lobes of the aril are unequal, the lateral half as long as the seed. The plant is 1-6 in. long, flowering from May to July, and is a herbaceous perennial.

ORDER CARYOPHYLLACEÆ

(See also p. 99)

Deptford Pink (*Dianthus Armeria*, L.).—The habitat of this plant is fields, dry banks, sandy and gravelly places, waste places, clayey pastures, cloverfields, roadsides, woods, hedgebanks. The habit is erect. The stems are downy, few, rigid, branched. The leaves are linear, opposite, united below, downy, the lower blunt, the upper acute. The bracts are lance-shaped, downy, as long as the calyx, with awl-like tips. The flowers are red with dark dots, or rose with white dots, close,

grouped, in loose cymes. The calyx-tube is cylindrical with many nerves, the calyx-scales lance-shaped, awl-like, downy. The petals are narrow, distant, toothed. The capsule is 4-valved above. The seeds are nearly flat one side, hollowed out, with a longitudinal keel. The plant is 6-18 in. high, flowering in July and August, and is a herbaceous annual.

Silene gallica, L.—The habitat of this plant is gravelly places. The plant is erect or much-branched. The plant is hairy and clammy. The lower leaves are spoon-shaped. The flowers are white or pink, in leafy racemes, the petals large, and scales small, entire, or divided into two nearly to the base. The calyx is membranous, with bristle-like teeth, and green, downy ribs. The capsule is egg-shaped on a bent-down flower-stalk, and is incompletely divided internally. The plant is 1-2 ft. high, flowering from June to October, and is a herbaceous perennial.

Nottingham Catchfly (*Silene nutans*, L.).—The habitat of this plant is dry places, limestone, chalky places, rocky places, walls. The habit is as in the last. The plant is downy. The rootstock is woody and branched. The stem is erect, clammy above, hairy. The radical leaves are spoon-shaped, oblong to lance-shaped, stalked, tufted. The stem-leaves are linear to lance-shaped, stalkless. The flowers are white or pink, in (hence *nutans*) drooping cymes. The branches are opposite, 3-flowered. The calyx is clammy, tubular, swollen in the middle, long, the teeth acute, membranous, with purple veins. The petals are divided into two nearly to the base, crowned, with linear, spreading lobes, narrow, hooded. The capsule is erect, exceeding and rupturing the calyx, longer than the carpophore. The scales are blunt. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Least Mouse Ear (*Cerastium pumilum*, Curt. =*glutinosum*, Fr.).—The habitat of this species is dry banks, calcareous places. The plant is small and sticky, has an erect stem, branched above the middle. The radical leaves are spoon-shaped, with long, linear stalks, the upper oblong. The flowers are in terminal, forked cymes, the petals notched, with branched veins. The sepals are lance-shaped, acute, with the borders and tips membranous. The upper bracts have a narrow, membranous border. The fruit-stalk is short, curved at the top, bent down from the base, at length erect. The capsule is curved upwards, longer than the calyx. The plant is 1-4 in. high, flowering in April and May, and is a herbaceous annual.

Five-stamened Mouse Ear (*Cerastium semi-decandrum*, L.).—The habitat of this plant is dry places, sandy, calcareous places, walls and banks. The habit is erect or prostrate. The plant is downy or clammy, or hairless, branched from the base. The leaves are broadly egg-shaped or oval, the lower with long, linear tufts. The bracts in the upper half have a membranous border. The flowers are white, in cymes, few or many. The petals are slightly notched, with simple veins,

shorter than the sepals. The 5 sepals are bent down between flowering and fruiting, and are glandular, acute, with broad, membranous margins. The stamens are 4-5, or 10. The capsule projects and is slightly curved, then erect. The fruit-stalk is longer than the calyx. The plant is 1-8 in. high, flowering from April to June, and is a herbaceous annual.

Dense-headed Mouse Ear (*Cerastium glomeratum*, Thuill.=*C. viscosum*, L.).—The habitat of this species is dry places, fields, and banks. The habit is erect as in the last, or branched, but the plant is larger and the leaves oval-shaped, pale-green. The bracts are not membranous, hairy. The flowers are in close, tufted cymes, more or less forming a head at first, longer than the stalks. The petals are divided into two nearly to the base, not so long as the sepals. They are acute, lance-shaped, the margin narrowly membranous, hairy, with few glands. The capsule is twice as long as the sepals, bent, cylindrical, the stalks as long as the calyx. The plant is 3-10 in. high, flowering between April and September, and is a herbaceous perennial.

Sandwort (*Arenaria verna*, L.).—The habitat of this species is dry rocks, pastures, banks, rocky places in mountainous districts. The habit is the rosette or cushion habit. The stems are tufted. The rootstock is woody. The plant is bright-green, glandular, with few hairs. The leaves are appressed, awl-like, linear, crowded, 3-nerved, acute, with a sharp point. The flowers are few, white, on slender, rigid branches. The bracts are acute, with membranous margins. The flower-stalks are slender, glandular. The sepals are ovate, lance-shaped, acute, 3-veined, with membranous margin. The petals are round, inversely ovate, narrow below, longer than the calyx. The capsule exceeds the sepals. The plant is 1-4 in. high, flowering from June to September, and is a herbaceous perennial.

Lloyd's Sandwort (*Arenaria serpyllifolia*, L.).—Lloyd's Sandwort is found in dry places and on wall-tops. The habit is prostrate, or more or less erect. The stem is much-branched, rigid, downy, greyish-green, the hairs bent back. The leaves are ovate, long-pointed, more or less stalkless, 1-3 nerved, fringed with hairs. The flowers are numerous, white, in cymes from forks of the stem or axils of the leaves, with leaflike bracts. The sepals have 3-5 hairy ribs, with narrow margins, and are longer than the petals, ovate, lance-shaped, acute. The petals are ovate, narrowed below. The fruit-stalks are erect or spreading, straight, longer than the capsule. The capsule is pitcher-like, ovoid, brittle when ripe. The seeds are rough, shining, without an aril. The plant is 2-12 in. high, flowering from May to August, and is a herbaceous annual.

Cypsel (*Arenaria cherieri*, Benth. = *A. sedoides*, L.).—The habitat of this plant is summits of lofty Scotch mountains. The habit is the cushion habit. The plant is tufted, with many compact stems, with a long tap-root, short, moss-like. The leaves are numerous, linear, awl-like, fringed with fine

hairs, overlapping, 3-angled, blunt, grooved above. The flowers are solitary, often apetalous, stalkless, or shortly-stalked. The sepals are blunt, 3-nerved, with membranous borders. In the male flowers the petals are awl-like. The capsule is egg-shaped, not so long as the sepals. The plant is 1-2 in., forming cushions 6 in. to 1 ft. in diameter, and flowers from June to August, being a herbaceous perennial.

ORDER LINACEÆ

Perennial Flax (*Linum perenne*, L.).—The habitat of this plant is chalky and limestone soils. The habit is grasslike. The stems are erect, numerous, wiry, slender, smooth. The leaves are alternate, narrow, lance-shaped, linear, acute. The flowers are bright-blue, few, in racemose cymes. The sepals are inversely egg-shaped, obscurely 5-veined, hairless, the inner 3 very blunt, entire. The petals are large, distinct. The fruit-stalks are erect. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Branching Flax (*Linum angustifolium*, Huds.).—The habitat of this plant is dry sandy and chalky places in the south. The habit is as in the last. The stems are numerous, loose, with few, irregular, spreading branches. The leaves are narrow (hence *angustifolium*), alternate, linear to lance-shaped, fewer and smaller than in *L. perenne*. The flowers are pale-lilac or blue, few, arranged in a cyme. The sepals are elliptic, pointed, fringed with hairs, the outer egg-shaped, with a long, narrow point, the inner 3-nerved, fringed with hairs. The capsule is downy within. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER LEGUMINOSÆ

Rest Harrow (*Ononis repens*, L.=*O. arvensis*, L.).—The habitat of this plant is dry pastures, barren, sandy places, sandy shores. The habit is shrubby, prostrate, then ascending (hence *repens*). The stem is hairy all round, spineless, clammy, with soft hairs, with stolons, rooting at the base. The leaflets are broad, oblong, the lateral sometimes wanting. The flowers are rose colour, axillary, solitary, stalked. The wings equal the keel, the standard being rather longer. The pods are egg-shaped, erect, not so long as the calyx, the seeds tubercled. The plant is 1-2 ft. high, flowering from June to September, and is a herbaceous or shrubby perennial.

Subterranean Trefoil (*Trifolium subterraneum*, L.).—The habitat of this plant is dry gravelly and sandy pastures. The habit is prostrate. The stems are numerous, hairy. The leaflets are hairy, broadly, inversely heart-shaped. The stipules are egg-shaped, pointed. The flowers are white, longer than the calyx, 2-5 in a head. The stalks are erect at first, curved after flowering, and the plant buries the fruit in the ground (hence *subterraneum*). The calyx is hairless, with threadlike teeth, equal, as long as the tube, inflated in fruit,

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then split lengthwise. The abortive calyces are numerous, slender, with 5 rigid points. The pod is rounded, flattened at the margin. The seeds are shining. The plant is 2-18 in. long, flowering in May and June, and is a herbaceous annual.

Cream-coloured Clover (*Trifolium ochroleucum*, Huds.).—The habitat of this plant is dry gravelly soils, dry pastures, waysides, in the eastern counties, clover fields, ballast hills. The habit is erect or ascending. The plant is softly downy. The lower leaves are long-stalked, the leaflets inversely egg-shaped, elliptic, oblong, the tip entire or notched, the lower notched, or heart-shaped. The stipules are lance-shaped, awl-like, parallel with the stem to the middle. The flowers are cream colour, brown when old, in round, then egg-shaped, solitary, terminal stalked heads. The calyx is downy, 10-veined, half as long as the corolla, the teeth spiny, spreading, bent back in fruit, the stalks short, opposite a pair of leaves. The lower tooth of the calyx is longer than the tube, the others two-thirds shorter. The pod is ribbed. The top falls away when ripe. The plant is 6-18 in. high, flowering from June to August, and is a herbaceous perennial.

Boccone's Clover (*Trifolium Bocconei*, Savi).—The habitat of this plant is dry places on short turf. The habit is erect. The plant is downy. The leaves are short-stalked. The leaflets are hairless, inversely egg-shaped, the lower roundish, the veins equal, straight at the border. The stipules are oblong, with an awl-like point. The flowers are small, pale yellow or white, in axillary and terminal, oblong, egg-shaped, cylindric, stalkless, paired heads. The teeth of the calyx are erect, as long as the corolla, hairless, spinose, lance-shaped, awl-like, the calyx with a ring in the throat, 10-veined, with one strong prominent vein. The pod is enclosed in the calyx. The seeds are oval, brownish-yellow, with a prominent radicle. The plant is 2-4 in. high, flowering in June and July, and is a herbaceous annual.

Soft Knotted Clover (*Trifolium striatum*, L.).—The habitat of this plant is dry pastures, dry sandy fields. The habit is prostrate, then ascending. The stem is softly hairy or silky, spreading. The leaflets are silky, inversely heart-shaped or egg-shaped, entire, stalked, the veins equal and straight at the border. The stipules have reddish veins, and are egg-shaped, membranous, the free portion broadly triangular, the tip bent back. The flowers are small, rose colour, in egg-shaped or oblong, stalkless, terminal, paired, and solitary, axillary heads, broadest below. The tube of the calyx is egg-shaped, swollen in fruit (the teeth not rigid or bent back), ribbed, with a narrow mouth. The calyx-teeth are not so long as the corolla, unequal, short, spiny, triangular to awl-like, 1-nerved, spreading in fruit. The seeds are oval, brownish-yellow, and the radicle is not prominent. The plant is 2-12 in. long, and flowers in June and July, being a herbaceous annual.

Rough Clover (*Trifolium scabrum*, L.).—The habitat of this plant is dry sandy places, stony pastures, or dry fields. The habit is prostrate,

then ascending. The stems are downy, rigid, zigzag, the leaves being borne on short stalks, the leaflets rigid, inversely egg-shaped. The flowers are white, or pinkish-white, borne in terminal or axillary heads, which are egg-shaped, stalkless, the teeth of the calyx being lance-shaped, with 1 strong prominent vein. When in fruit the calyx is cylindrical, the teeth bent back, stiff, and unequal. It is 4-10 in. long, and flowers in May up till July, being an annual and herbaceous.

Round-headed Clover (*Trifolium glomeratum*, L.).—The habitat of this Clover is gravelly places, commons, sandy pastures, ballast hills. It is a prostrate plant, ascending at the extremities, with smooth, slender, spreading stems. The leaflets are inversely heart-shaped, the egg-shaped stipules or leaflike organs having long points. The flowers are rose-coloured, borne in stalkless heads, which are rounded, terminal, or in the axils. The calyx is stalkless, the acute teeth being 10-veined and egg-shaped. The plant is 6 in. to 1 ft. in length, and flowers in June, being a herbaceous annual.

Narrow-leaved Bird's Foot (*Lotus tenuis*, Waldst. & Kit.).—The habitat of this plant is damp and stiff soils, meadows, moist banks, waste places. The habit is prostrate or ascending. The stem is hairless or thinly hairy, threadlike (hence *tenuis*). The leaflets are linear, acute, or inversely egg-shaped, lance-shaped with a long narrow point. The stipules are narrow, half egg-shaped. The flowers are small, few, 2-5 in a head, light yellow, the petals turning green when dry. The wings are oblong to inversely egg-shaped, the lower border abruptly curved at the apex. The teeth of the calyx are short, awl-like, closely pressed in bud, the points of the two upper teeth meeting together. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

Purple Vetch (*Astragalus hypoglossis*, L. = *A. danicus*, Retz.).—The habitat of this plant is chalky and gravelly places, dry, sunny pastures. The habit is prostrate, or ascending. The stem is short, clothed with soft hairs, which are black above, slender. The rootstock is slender, branching, straggly. The leaves are shorter than the stout flower-stalks. The leaflets are in 8-10 pairs, blunt, small, numerous, oblong, linear. The stipules are united below opposite the leaves. The flowers are purple, in large heads, or ascending, egg-shaped racemes. The calyx has black hairs longer than the bracts. The pods are shortly-stalked, hairy, short, egg-shaped, nearly erect, included in the calyx, 2-seeded. The ovary is twice as long as the stalk. The plant is 2-9 in. high, flowering from June to August, and is a herbaceous perennial.

Bractless Bird's Foot (*Ornithopus ebracteatus*, Brot. = *O. pinnatus*, Mill.).—The habitat of this plant is dry and sandy places. The habit is prostrate or ascending. The stem is threadlike, and the plant is nearly hairless, bluish-green. The leaves have lobes each side of a common stalk (hence *pinnatus*), stalked. The leaflets are distant, oblong, elliptic, the lowest pair distant from the stem. There are no bracts (hence *ebracteatus*).

The flowers are small, bright-yellow, in heads, 2-5, the standard red outside, with red veins. The flower-stalks are as long as the leaves. The pod is slender, beaked, or curved upwards; the 10-14 joints cylindrical, rough or granulate. The plant is 4-18 in. high, and flowers from May to August. It is a herbaceous annual.

Narrow-leaved Crimson Vetch (*Vicia angustifolia*, L.).—The habitat of this Vetch is dry places, banks, &c. The habit is climbing, as in *V. sativa*. The plant is stout, the stem slender. The upper leaves have linear, lance-shaped, oblong leaflets, acute or blunt. The lower leaflets are notched or inversely heart-shaped, or egg-shaped. The flowers are smaller, often solitary, or in pairs, rose colour. The calyx-teeth are nearly as long as the tube. The pods are chiefly spreading, not splitting the calyx. The plant is 6-12 in. high, flowering from April to July, and is a herbaceous annual.

Spring Vetch (*Vicia lathyroides*, L.).—The habitat of this Vetch is dry gravelly and sandy places, dry pastures, roadsides. The habit is prostrate, then ascending. The plant is hairy. The stem is slender, spreading. The leaflets are in 1-3 pairs acute, blunt, or notched, inversely egg-shaped, linear to oblong. There are no tendrils or simple ones. The flowers are small, solitary, stalkless, lilac-purple, in the axils. The calyx is funnel-shaped, and the calyx-teeth are awl-like, equal, straight, as long as the tube. The pods are hairless, linear, stalkless, tapered both ends, beaked. The 8-12 seeds are tubereled, obtusely angled, nearly cubical, with a very short hilum. The plant is 3-8 in. high, flowering in May and June, and is a herbaceous annual.

ORDER ROSACEÆ

Rubus scheutzii, Lindeb.—The habitat of this Rubus is open stony places. The habit is that of a bush forming large, low, circular masses. The stem is smooth or nearly so, and shining. The leaflets are the same colour both sides, with a few hairs only. The leaflets are all especially broad, a little paler and soft beneath. The terminal leaflets are round, with a very short, blunt point, with almost entire base, and long leaf-stalk. The panicle is long, narrow, leafy. The large petals are pale-lilac. The plant is very prickly.

Spring Cinquefoil (*Potentilla verna*, L.).—The habitat of this plant is dry hilly pastures. The habit is prostrate. The stem is woody, tufted, branched. The radical leaves have 5-7 wedge-shaped, inversely egg-shaped leaflets, and are green both sides, toothed at the end, the terminal tooth smallest and shortest, with the border bristly, and on the ribs below, blunt, scalloped, or lobed above, with narrow stipules, awl-like above. The stem-leaves have 1-3 leaflets, with egg-shaped, lance-shaped stipules. The flowers are yellow, solitary, or 2-3. The achenes are smooth, hairless. The plant is 3-6 in. high, flowering from April till June, and is a herbaceous or semi-shrubby perennial.

ORDER SAXIFRAGACEÆ

Kidney-leaved Saxifrage (*Saxifraga Geum*, L.).

—The habit of this Saxifrage is the rosette habit. The plant is hairy. The stem is slender. The leaves are hairy, leathery, round, transversely oval or kidney-shaped, scalloped or toothed, heart-shaped below, broader than long, purple, netted below, the leaf-stalk slender, semi-cylindrical, the edges raised. The flowers are in a racemose panicle. The flowers are as in *S. umbrosa*. The plant is 6-12 in. high, flowering in June, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

Burnet Saxifrage (*Pimpinella Saxifraga*, L.).

The habitat of this species is dry pastures, bushy waste places, and calcareous soils. The habit is erect. The stem is branched, rounded, slender, furrowed, hairless or downy, naked. The root-stock is slender, hot, and acrid. The radical leaves are stalkless, arranged each side of a stalk. The leaflets are in 4-8 pairs, variable, toothed, lobed, the leaves sometimes nearly divided to the base, nearly round, the stem-leaves bipinnate, the lobes much narrower. The flowers are small, white, in a flat-topped umbel. The styles are shorter than the ovary. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

Sweet Cicely (*Myrrhis odorata*, Scop.).—The habitat of this plant is dry hilly pastures, waysides, and hedgerows. The habit is erect, with hollow, grooved, stout stems, the leaves large, with triangular leaves, tripinnate, with lance-shaped leaflets divided nearly to the base, whitish below, blotched above. The flowerheads are large with white florets with petals slightly bent in, the bracts lance-shaped. The fruit is linear, 1 in. long, with rough ridges, beaked, with slender, spreading styles. The plant is 2-3 ft. high, flowering in May and June, and is perennial, herbaceous.

Mountain Stone Parsley (*Seseli Libanotis*, Koch).—The habitat of this plant is chalk hills and pastures. The habit is erect, the rosette habit. The plant is hairless or slightly downy, covered below with the remains of decayed leaf-stalks. The stem is stout, solid, furrowed, with few branches. The leaves are twice pinnate, with lobes each side of a common stalk, the leaflets divided nearly to the base. The leaflets are stalkless, egg-shaped, lance-shaped, blunt-pointed, the lower crossing. The flowers are small, in rounded, terminal, convex umbels, with many downy rays, and nearly equal, awl-like, turned-back bracts, and bracteoles fringed with hairs. The calyx-teeth are awl-like, falling. The fruit is hairy, egg-shaped. The styles are slender, curved back. The plant is 4 in. to 2 ft. or more high, flowering in July and August, and is a herbaceous perennial.

Bald Money (*Meum athamanticum*, Jacq.).

The habitat of this plant is hilly fields and dry pastures. The habit is tufted, erect, with rounded stems, with fibrous remains of decayed leaf-stalks

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at the base, the leaflets much divided, dark-green, with bristle-like segments and spreading, the leaf-stalk as long as the leaf-blade. The flowerhead is a many-rayed umbel, with violet or yellow-white florets, the fruit brown, oblong, nearly round, the carpels with acute ridges, the seeds hollow ventrally. The plant is from 6 in. to 1½ ft. in height, and flowers in June and July, being a herbaceous perennial.

Knotted Hedge Parsley (*Cancalis nodosa*, Scop.).—The habitat of this plant is dry sunny banks, cornfields, &c. The habit is prostrate. The stem is spreading, slender, wavy, angled, solid. The upper leaves are 1-2 pinnate, the lower 2 pinnate, with lobes each side of a common stalk. The leaflets are divided nearly to the base, small. The flowers are small, regular, pink, in dense, stalkless, lateral, small, round umbels opposite a leaf-stalk. There is no general involucle. There are no bracts. The fruit has spreading, barbed bristles, hooked at the tip, egg-shaped, the inner tubercled, the outer with one or more carpels, with hooked spines. The styles are very short. The plant is 6-18 in. high, flowering from May to July, and is a herbaceous annual.

ORDER RURIACEÆ

Limestone Bedstraw (*Galium sylvestre*, Poll. = *G. asperum*, Schreb. = *G. pusillum*, L. = *G. umbellatum*, Lam.).—The habitat of this Galium is dry rocky hills, pastures, limestone hills. The habit is ascending or erect. The stems are rigid, smooth, hairless, or downy below, numerous, slender, square, branched. The leaves are 6-8, in a whorl, narrow, stiffer, awned, with a long, narrow point, slightly rolled back at the margins with a slender prominent midrib, with marginal hairs, spreading or turned back. The flowers are in loose cymes, narrowed above, white, few, erect to spreading, with acute petals. The fruit is granulate. The plant is 6-10 in. high, flowering from June to August, and is a herbaceous perennial.

Squincany Wort (*Asperula cynanchica*, L.).—The habitat of this species is dry banks in limestone districts, chalk downs, banks, and pastures. The habit is prostrate or ascending. The root is spindle-shaped. The stems are numerous, hairless, tufted, with ascending branches. The lowest leaves are inversely egg-shaped, the intermediate ones inversely egg-shaped to lance-shaped, the upper lance-shaped, narrowed, mostly linear and unequal, 4 in a whorl, 2 smaller, close set, rigid, blunt-pointed, bent back, not fringed with hairs. The flowers are pink in a loose cyme, the corolla covered with wartlike knobs outside, white within. The fruit is small, warted, wrinkled. The plant is 6-10 in. long, flowering in June and July, and is a herbaceous perennial.

ORDER COMPOSITÆ

Least Erect Cudweed (*Filago minima*, Fr.).—The habitat of this species is dry, sandy, gravelly soil, dry places. The habit is erect, or prostrate,

spreading. The stem is slender (the plant greyish), repeatedly forked. The leaves are linear, lance-shaped, acute, flat, small, erect, closely pressed to the stem. The flowerheads are terminal, and in the axils, longer than the leaves, pyramidal, woolly, stalkless. The phyllaries are in 2 series, spreading at length, swollen, hollow below, lance-shaped, blunt, hairless, the tips discoloured, the florets yellowish. The fruit is rounded, with wartlike knobs. The plant is 2-8 in. high, flowering from June to September, and is a herbaceous annual.

Chamomile (*Anthemis nobilis*, L.).—The habitat of this species is dry pastures, commons, especially in the South of England, and it is now on the decrease in the Midlands and northwards. The habit is prostrate, ascending at the extremity. The whole plant is strong-smelling, downy, the stem branched from the base, with numerous leaves. The leaves are twice pinnate, with linear segments. The involucral bracts are blunt. The solitary terminal flowerheads are conspicuous with a yellow disk and white ray, the latter sometimes absent, the florets in the former cylindrical, the ray florets female. Between each 2 florets is an oblong blunt scale. The fruit is round or inversely egg-shaped. There is no pappus. The plant is a foot in height. It flowers in July and August, and is a herbaceous perennial.

Field Ragwort (*Senecio campestris*, D.C. = *S. integrifolia*, Clairv.).—The habitat of this species is dry banks, chalk downs. The habit is erect. The flowering stem is simple, shaggy. The root-stock is short with thick fibres. The radical leaves are egg-shaped, entire (hence *integrifolia*) or wavy, spreading, leathery, short-stalked, blunt, downy and cottony above. The stem-leaves are small, lance-shaped. The scape is stout or slender, with long, narrow, closely pressed bracts. The flowerheads are pale-yellow, few, in a corymb, on short, erect stalks with bracts below. The involucre is broadly bell-shaped, pale, hairless above, woolly below. The ray florets are as long as the bracts, which are blunt and narrow. The fruit is hairy, ribbed. The plant is 4-15 in. high, flowering in May and June, and is a herbaceous perennial.

Swine's Succory (*Arnoseris pusilla*, Gaert.).—The habitat of this plant is dry pastures and fields, gravelly and sandy fields, cultivated ground. It disappears after cultivation. The plant is erect, with the rosette habit. The stem is hollow upwards, swelling, leafless, being a scape, with a small bract below each branch, which overtops the previous one. The scapes are numerous, slender, rigid, with few branches above. The radical leaves are narrow, oblong, inversely egg-shaped to spoon-shaped, or lance-shaped, toothed. The flowerheads are yellow, terminal, solitary, small, or bell-shaped, inclined in bud. The phyllaries are herbaceous, downy, linear to lance-shaped, the tips narrow, blunt. The receptacle is honeycombed at the border. The fruit is small, pale-brown, rough between the ribs, crowned by a minute raised border, 5-angled, narrow below. The plant is 4-12 in. tall, flowering from June to August, and is a herbaceous annual.

Fœtid Hawksbeard (*Crepis fœtida*, L.).—The habitat of this species is chalky and gravelly banks, chalky places, chalk downs, shingle. The habit is the rosette habit. The stem is ribbed and furrowed, hairy, branched from below, round. The leaves are chiefly radical with lobes, turned back, each side of a common stalk, deeply divided to the base, the stem-leaves few, small, stalkless, lance-shaped, toothed below. The flowerheads are yellow, solitary, few, terminal, on long simple stalks, with bracts bent inwards, thicker above. The buds are drooping. The phyllaries are glandular, cottony, the inner hardening and enclosing the outer achenes, the outer erect or spreading. The fruit is yellow to brown, the beak of the outer ones shorter than the bracts, the inner longer beaked. There are closely-pressed hairs in the interior of the bracts. The plant has a strong odour. It is 6–18 in. high, flowering in June and July, and is an annual or biennial and herbaceous.

Dandelion Hawkweed (*Crepis taraxacifolia*, Thunb.).—The habitat of this plant is dry banks, chalky pastures, limestone districts, and cultivated ground. The habit is as in the last. The stem is furrowed, angular, hairy, branched above, purple below. The leaves are rough, deeply divided nearly to the base, the lobes turned back, chiefly radical, with backwardly directed teeth, the terminal lobe large. The stem-leaves are few, stalkless, clasping, toothed, deeply divided nearly to the base. The flowerheads are yellow, purple below, the outer florets striped with brown on the back. The heads are cylindric to bell-shaped, on slender stalks, glandular, cottony, the outer phyllaries covering half the pappus, spreading, not enclosing the outer fruits. The buds are erect. The fruit is yellowish-brown, equally long-beaked, slender, narrowing into a bristle-like beak of the same length, with rough ribs. The plant is 1–3 ft. high, flowering in June and July, and is a herbaceous biennial.

Taraxacum erythrospermum, D.C.—The habitat of this species is dry sandy calcareous soils. The habit is much as in the type. The leaves are dull-green or bluish-green, deeply divided nearly to the base, the lowermost sometimes inversely egg-shaped and toothed, the upper with lobes each side of a common stalk, turned back, the teeth unequal, the intermediate ones smaller. The outer phyllaries are lance-shaped, close-pressed or spreading, the inner appendiculate below the tip or swollen. The fruit is bright-red, prickly at the apex, the beak having a thickened, coloured base.

ORDER CAMPANULACEÆ

Blue Rampion (*Phyteuma orbiculare*, L.).—The habitat of this plant is chalk downs. The habit is erect or ascending. The stems are numerous, smooth, or slightly hairy. The radical leaves are long-stalked, oblong, lance-shaped, rarely heart-shaped, scalloped, toothed, the stem-leaves linear, lance-shaped, stalkless. The bracts are short, oblong, linear, acute. The flowers are deep-blue,

in round terminal heads, oval in fruit. The calyx-tube is short, with triangular lobes. The corolla-lobes are free to the base at length. The capsule is short, 2- to 3-celled. The stigmas are 3. The plant is 4–15 in. high, flowering in July and August, and is a herbaceous perennial.

Clustered Bellflower (*Campanula glomerata*, L.).—The habitat of this Campanula is dry calcareous pastures and downs. The plant is erect. The stem is simple, rounded, angular, short, leafy, slender. The plant is downy. The rootstock is short and stout. The leaves are hoary below, rough, oblong to lance-shaped, scalloped, finely toothed. The radical leaves are long-stalked, oblong, egg-shaped, heart-shaped. The upper leaves are half-clasping, stalkless, egg-shaped, acute. The bracts are egg-shaped, with a long, narrow point, shorter than the flowers. The flowers are bright-blue, erect, stalkless, in a leafy terminal head, with axillary buds below. The central flower opens first. The corolla is funnel-shaped, large, downy. The lobes are bent back and acute. The calyx-tube is short, inversely conical, 5-ribbed, the lobes egg-shaped. The capsule is short, with basal valves. The plant is 2–18 in. high, flowering in July and August, and is a herbaceous biennial.

ORDER GENTIANACEÆ

Centaurium (*Erythraea capitatum*, R. and B.)—The habitat of this species is downs and the South coast of England. The plant is erect, with the rosette habit. The stem is short, simple. The stem-leaves are egg-shaped, spoon-shaped, blunt, 3-veined. The radical leaves form a rosette, 3–5 nerved, with 3 long and 2 short veins. The flowering tufts are stalkless, some long-stalked tufts overtopping the primary tuft from the outer bracts. The flowers are stalkless, in close, terminal tufts, rose-colour, the cylindrical corolla-tube longer than the calyx, the top not narrowed, nor lengthening, the lobes oblong, blunt. The stamens are inserted at the base of the tube above. The capsule half-projects. The plant is 2–4 in. high, flowering in July and August, and is a herbaceous annual.

Gentiana lingulata, C. A. Agardh, b. *præcox*, Raf. = *G. campestris*, L., b. *obtusifolia*, Williams.—This plant is an early vernal flowering state of *G. campestris*, according to Mr. F. N. Williams (Prod., p. 235), and not of *G. amarella*, with all the leaves blunt, the calyx-lobes unequal, and with tetramerous flowers. It flowers in May and June.

Gentiana ballica, Murb.—This species is regarded by Mr. F. N. Williams (Prod., p. 235) as synonymous with *G. campestris*. It is an annual form, with the lower leaves egg-shaped to lance-shaped, and smaller flowers.

Yellow Wort (*Blackstonia (Chlora) perfoliata*, Huds.)—The habitat of this species is clay or calcareous banks and pastures, damp chalky places. The plant has the rosette habit. The stem and leaves are bluish-green. The stems are

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simple, the leaves enveloping them at the base, so that creeping insects cannot climb up the stem, and are square or round, several. The radical leaves are inversely egg-shaped to spoon-shaped, blunt, narrowed below. The stem-leaves are smaller, broadly egg-shaped, acute, in distant pairs, clasping the stem. The flowers are numerous, yellow (hence *chloris*), in a forked panicle. The calyx is divided to the base into 8 slender, narrow, linear, awl-like segments. The corolla-lobes are oblong, blunt, the tube ruptured by the ripe capsule. The stigmas are yellow, divided into 2 nearly to the base. The plant is 4-18 in. high, flowering from June to September, and is a herbaceous annual.

ORDER SCROPHULARIACEÆ

Large-flowered Mullein (*Verbascum virgatum*, Stokes).—The habitat of this plant is gravelly banks, waste places. This species has been regarded as a sub-species of *V. Blattaria*. The habit is erect, pyramidal. The plant is stouter than the latter. The leaves are doubly toothed, glandular, hairy, and run down the stalk. The radical leaves are oblong to lance-shaped, with lobes more or less larger upwards, lobed, scalloped, toothed, the upper oblong, with a long, narrow point, half-clasping. The flowers are yellow, on short stalks, with 1-5 flowers, shorter than the bracts or calyx. The flowers are in a dense raceme, glandular, softly hairy. The anther-stalks have purple hairs, 2 longer and only hairy within, the stamens nearly equal. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous biennial.

ORDER LABIATE

Wood Calamint (*Satureia (Calamintha) sylvatica*, Bromf. = *S. grandiflora*, Sch. = *C. officinalis*, Moench).—The habitat of this plant is bushy places and chalk banks. The habit is somewhat creeping. The branches are long, ascending (or not). The stem is nearly simple, wavy. The leaves are broadly egg-shaped, scalloped, toothed, large. The flowers are large, in loose, many-flowered cymes, the common stalk as long as the primary partial stalk. The calyx is tubular, 2-lipped, the upper teeth turned back, fringed with hairs, purple-tinged, bent on the stalk. The lower lip of the large purple corolla has touching or overlapping lobes, long, nearly equal, the middle lobe short and broad, nearly equalling the lateral, the tube projecting far, and twice as long as the calyx. The plant is 1-2 ft. high, flowering in August and September, and is a herbaceous perennial.

Salvia Marquandii, Druce (= *S. clandestina*, Syme).—The habitat of this plant is dry gravelly banks, sandy coasts. The plant has the rosette habit. It is more slender than *S. Verbenaca*. The leaves are stalked, narrower, heart-shaped, oblong, wavy-toothed, the upper oblong, acute. The calyx-teeth are stalkless, the upper are less spiny, small, the corolla longer than the calyx, more purple

or pale-blue, the upper lip longer, arched. The plant is 1 ft. high, flowering in July, and is a herbaceous perennial.

ORDER SANTALACEÆ

Bastard Toadflax (*Thesium humifusum*, D.C. = *T. linophyllum*, Sm.).—The habitat of this plant is dry calcareous pastures, chalk and oolite hills. The plant is a hemi-parasite on the roots of other plants. The habit is prostrate. The rootstock is yellow, woody, the roots fibrous, with white suckers on the sides. The stems are branched, numerous, leafy, spreading in a circle. The leaves are linear, lance-shaped, obscurely nerved, yellowish-green, blunt or acute, slender, the upper leaves finely toothed, rough. The flowers are greenish-white, in leafy, tufted racemes on rough stalks, as long as or longer than the flowers, spreading in fruit, the angles rough. The bracts are rough, finely toothed, the lower middle ones longer than the flowers. The perianth-tube is funnel-shaped, short, open, the lobes triangular, bent inwards, spreading at the end, toothed in fruit. The fruit is green, egg-shaped, oval to oblong, longer than the persistent perianth, ribbed, netted, narrowed into the short, stout stalk. The fruit is a nut, 1-seeded. The plant is 4-12 in. long, flowering from May to July, and is a herbaceous perennial.

ORDER ORCHIDACEÆ

Lady's Tresses (*Spiranthes autumnalis*, Rich. = *S. spiralis*, Koch).—The habitat of this plant is turf places, dry calcareous and gravelly places, dry pastures. The plant has the orchid habit, and is erect. The stem is slender, downy above. The 2-3 tubers are few, oblong, thick. The radical leaves are in lateral rosettes, egg-shaped to oblong, acute, appearing after the flowers. The stem-leaves are bract-like. The flowers are in a slender, dense, spirally-twisted spike (hence *Spiranthes*), fragrant, greenish-white, in one row. The scape is sheathed by the bracts, which are abrupt and cucullate. The column and lid are acute, with a blunt, membranous process between. The lip is channelled below, the tip scalloped, projecting. The plant is 4-6 in. high, flowering in August and September, and is a herbaceous perennial.

Dark-winged Orchis (*Orchis ustulata*, L.).—The habitat of this plant is calcareous hills, pastures, and downs. The habit is the orchid habit. The tubers are egg-shaped. The leaves are oblong, narrow, lance-shaped, acute, not spotted. The bracts are long. The flowers are small, whitish-purple, purple above, whitish below, many, in a dense spike. The lip is white, with raised, purple spots, 3-lobed, the middle one divided into two nearly to the base, nearly equalling the lateral, linear to oblong, with no point in the notch of the lower segment. The sepals form a hood including the petals, which are linear to lance-shaped, blunt. The helmet is dark-purple. The contrast between the colour of the flower, dark above and white below, has suggested the name

Burnt Orchid (hence, too, *ustulata*). The spur is bent down, blunt, as long as the ovary. The plant is 4-9 in. high, and flowers from May till July, being a herbaceous perennial.

Great Military Orchis (*Orchis purpurea*, Huds.).—The habitat of this plant is chalky, bushy hills, woods, downs, and copses on chalk soils. The habit is the orchid habit. The plant is stout, with egg-shaped tubers. The leaves are oblong, blunt, egg-shaped. The flowers are in a large, dense, many-flowered spike. The sepals and petals are barely acute, green and purple, blunt. The lip is 3-lobed, the lateral lobes narrow, enlarged, toothed, the middle inversely heart-shaped, scalloped, pale-rose with purple spots, the lower segment with a point in the notch, and the lobes are broad, flat. The egg-shaped helmet of the flower is reddish-brown, formed by the sepals which include the petals. The spur is half as long as the ovary. The bracts are small. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Pyramidal Orchid (*Orchis pyramidalis*, L.).—The habitat of this plant is calcareous pastures, rarely on sandy hills. The plant has the orchid habit, and a slender stem, with entire, round tubers. The leaves are linear, lance-shaped, acute, with a long, narrow point, chiefly radical. The bracts are as long as the ovary, coloured, 1- to 3-nerved. The flowers are in a dense, pyramidal spike, then oblong, rosy or white. The lobes of the lip are equal, entire, oblong, blunt, and the lip is broader than long, with 2 tubercles below. The lateral sepals are spreading, egg-shaped to lance-shaped, acute, 3-veined. The pollen-glands are united. The spur is thread-like, longer than the ovary. The plant is 1-1½ ft. high, flowering in July, and is a herbaceous perennial.

Late Spider Orchis (*Ophrys fuciflora*, Reichb. = *O. Arachnites*, Hoffm.).—The habitat of this plant is chalky downs. The flowers are purple, the petals downy, sub-triangular to egg-shaped, the lip longer than the sepals, which are pink inside. The lip is swollen, entire or 4-lobed, with an intermediate heart-shaped, flat, green appendage in the notch. The lip is velvety, dark-purple with yellow markings. The anthers have a straight or hooked point. The pollen is stiff and does not fall on the stigma. The plant is 4-9 in. high, flowering in May and June, and is a herbaceous perennial.

White Mountain Orchis (*Habenaria albida*, Br.).—The habitat of this plant is hilly and mountain pastures. The plant has the orchid habit. The tubers are clustered. The leaves are numerous, small, oblong, blunt—the upper lance-shaped, acute. The bracts are 3-veined, green, as long as the ovary. The flowers are white, in a narrow, cylindrical, dense spike, nearly arranged all one side, sweet-scented. The sepals and lateral petals form a helmet, and the former are blunt like the petals. The lip is acutely 3-lobed, small, projecting, the lobes unequal, entire, the middle longest and broadest. The spur is shorter than the ovary.

The plant is 6-12 in. high, flowering in June and July, and is a herbaceous perennial.

Frog Orchis (*Habenaria viridis*, R. Br.).—The habitat of this plant is hilly meadows, grassy places, and pastures. The plant has the orchid habit, with palmate tubers. The leaves are numerous, narrow to oblong, blunt, smaller upwards. The bracts are shorter than the flowers, green. The flowers are green, with a paler brown lip, the petals and sepals striped with dark-red, the lip linear-oblong, greenish-brown, divided into two nearly to the base, with 3 tubercles at the base. The sepals form a hemispherical hood. The spurs are short. The anther-cells are spreading. There is no rostellum. The stigma is oblong, notched above. The glands of the pollinia are connected by a raised, transverse line. The plant is 4-12 in. high, flowering from June to September, and is a herbaceous perennial.

ORDER LILIACEÆ

Small Round-headed Garlic (*Allium sphærocephalum*, L.).—The habitat of this plant is sandy and calcareous places, steep declivities or rocks, and sandy coasts (Jersey). The plant has the lily habit. The stem is leafy below. The bulb has stalked offsets. The leaves are hollow, round, flattened or grooved, the ribs of the leaf rough when young, fading before flowering. The flowers are rose-colour or purple, in dense, round heads, or umbels, without bulbils. The keels are dark, rough. There are 2 short spathes, shortly beaked. The stamens are twice as long as the perianth. The anthers are included. The anther-bearing point of the 3-pointed anther-stalks is as long as the undivided part, longer than the lateral points. The plant is 1-2 ft. high, flowering from June to August, and is a herbaceous perennial.

Sand Leek (*Allium Scorodoprasum*, L.).—The habitat of this plant is sandy woods and fields, bushy places, dry pastures and copses. The habit is as in the last. The bulb is egg-shaped, with small, stalked bulbils. The stem is leafy below. The leaves are linear, keeled, flat, with 2-edged sheaths, with rough edges, bluish-green, solid. The flowers are purple, few, in small heads, the bulbs spherical, small, deep-purple, in a round umbel. There are 2 shortly-beaked spathes, short-pointed, short and broad. The anthers do not project. The perianth-segments are red-purple, with a small point, with white margins, the outer keel rough. The anther-bearing points of the 3-pointed anther-stalks are shorter than the entire part or lateral points. The plant is 2-3 ft. high, flowering from May to August, and is a herbaceous perennial.

Chives (*Allium Schænoprassum*, L.).—The habitat of this plant is river-sides, rocky pastures, meadows, and pastures in mountainous regions. The habit is as in the last. The bulbs are narrow, small, tufted. The stem is leafless, or there may be 1 leaf. The leaves are hollow, rounded, grooved or flattened above, awl-like, straight, smooth-ribbed, with barren bulbs. The scapes

are slender or stout, hollow. The flowers are pink, in dense tufts, with lance-shaped petals, with many flowers in the umbel, without bulbs. The spathes are 2, egg-shaped, pointed, as long as the flowers. The stamens are united below, included, about half as long as the lance-shaped, pale-purple, bell-shaped perianth-segments, shortly stalked. The plant is 6-15 in. high, flowers in June and July, and is a herbaceous perennial.

Vernal Squill (*Scilla verna*, Huds.).—The habitat of this species is grassy places near the sea, rocky pastures. The plant has the lily habit. The bulb is as large as a hazel-nut. The leaves are linear, channelled, hooded at the end, appearing before the flowers (hence *verna*), numerous, as long as, or longer than, the stalk, bent back. The scapes are not so long as the leaves. The bracts are lance-shaped, as long as the flower-stalks. The flowers are few, bright-blue, fragrant, in more or less of a corymb. The perianth-segments are free. The anthers are purple. The capsule is small. The plant is 4-6 in. high, flowering in April and May, and is a herbaceous perennial.

Wild Tulip (*Tulipa sylvestris*, L.).—The habitat of this plant is chalk pits in the E. counties, meadows near Nottingham and Yorks, parks, &c. The plant has the lily habit. The bulb is small, egg-shaped, stoloniferous, with chestnut-brown scales. The leaves are few, lance-shaped, linear, bluish-green. The stem is round, wavy. The flowers are fragrant, bright-yellow, rarely produced in the wild state, the flowers drooping at first, then nearly erect, the perianth-segments elliptic to lance-shaped, the tips hairy, the scape 1-flowered, hairless. The stigma is yellow, and the stamens are hairy below. The capsule is acute above and below. The plant is 6-18 in. high, flowering in April and May, and is a herbaceous perennial.

ORDER JUNCACEÆ

Thin Rush (*Juncus tenuis*, Willd.).—The habitat of this plant is sandy moist ground and roadsides. G. Don found it by a rivulet in marshy ground among the mountains of Clova, near the summit. The plant has the rush habit. The stems are wiry, round, cylindric, slender, with few leaves below, the rootstock tufted. The leaves are linear, mostly radical, slender, furrowed, few, enlarged at the base, membranous, with broad sheaths, and long slender laminae. The bracts are erect, thread-like. The flowers are stalkless, and stalked in a terminal compound cyme, shorter than the long bracts, pale. The perianth-segments are lance-shaped, acute, with a long, narrow point, longer than the capsule, which is swollen, spherical, egg-shaped, blunt, notched, shining. The seeds are small, ellipsoid, pointed each end, minutely netted. The plant is 6-18 in. high, flowering from July to September, and is a herbaceous perennial.

Drooping Mountain Woodrush (*Luzula arcuata*, Sw.).—The habitat of this plant is high alps, the tops of Scotch mountains. The habit is as in the last. The plant is dwarf, with a creeping, loosely-tufted rootstock, and slender stolons. The stems

are stout or slender. The leaves are slightly hairy, channelled, short, curved, narrowly linear, leathery, bent back. The flowers are in loose umbellate cymes of 3-5 clusters, one-stalked, with few branches, the outer bent back, 1-3 flowered, on long drooping stalks. The perianth-segments are broadly lance-shaped, bristle-pointed, longer than the capsule. The anther-stalks equal the anthers. The capsule is egg-shaped, with a blunt point, round, the seeds oblong, blunt, with hardly any appendage below. The plant is 1-4 in. high, flowering from June to July, and is a herbaceous perennial.

Dwarf Silvery Sedge (*Carex humilis*, Leyss. = *C. clandestina*, Good.).—The habitat of this species is limestone hills, dry grassy hills, and downs. The plant has the sedge habit, and the rootstock is creeping, stout. The stems are 3-angled, smooth, hidden amongst the leaves (hence *clandestina*). The leaves are radical, linear, with rolled margins, curved, stiff, channelled, rough. The bracts are glumaceous, blunt, silvery, membranous, bordered. The fertile spikelets are distant, slender, loose, 3-4 flowered, white, enclosed in the bracts, the male spikelets solitary. The fruit is narrow, inversely egg-shaped, stalked, 3-angled, downy, greenish, 2-faced, 1-ribbed, the mouth entire, oblique. The silvery glumes are marked with pink and green. The beak is short, entire. The nut is smooth, beaked, pale-brown, 3-angled. The plant is low, 1-3 in. high (hence *humilis*), flowering from April to June, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Holy Grass (*Hierochloë borealis*, R. and S. = *Savastana odorata*, L.).—The habitat of this plant is damp grassy places, wet banks. The plant has the grass habit. The rootstock is creeping. The stems are smooth, hairless, and tufted. The leaves are flat, acute, with rough edges. The sheaths are smooth. The ligule is long. The panicle is erect, rather one-sided, pyramidal, with few branches. The stalks are smooth. The spikelets are broad, egg-shaped, brown, shining. The flowering glumes are shortly awned near the tip, those of the male spikelets hairy, fringed with hairs, those of the complete florets hairy above. The empty glumes are membranous, shining, acute, toothed, blunt-pointed. The fruit is rounded. The plant is 4-10 in. high, flowering in May and June, and is an annual or perennial, and herbaceous.

Purple-stalked Cat's Tail (*Phleum phleoides*, Simonk. = *P. phalaroides*, Koel. = *P. Boehmeri*, Web.).—The habitat of this plant is dry sandy and chalky fields and pastures. The plant has the grass habit. The plant is hairless. The culm is purple. The stems are smooth, ascending, leafy below, leafless above, with barren leafy shoots. The leaves are short, flat, rough, bluish-green. The leaf-sheaths are slightly swollen. The upper ligules are long. The panicle is long, cylindrical, narrow, blunt, green, somewhat inter-

rupted. The spikelets are grouped. The empty glumes are linear to oblong, blunt below, the keel smooth or fringed with hairs. The awn is awl-like, short, rigid, leathery, green, the border white dotted. The flowering glume is very small. The anthers are linear to oblong. The plant is 12-18 in. high, flowering from June to August, and is an annual or perennial, and herbaceous.

Crested Hair Grass (*Koeleria cristata*, Pers. = *K. gracilis*, Pers.).—The habitat of this plant is dry pastures and banks. The plant has the grass habit, and is downy or silky, pale-green. The root is slender, the plant stoloniferous. The stem is slender, downy, especially above. The leaves are narrow, rough at the edges, fringed with hairs, hairless below, with inrolled margins, adapted to dry conditions. The sheaths are furrowed. There is no ligule. The panicle is linear, oblong, lance-shaped, silvery, interrupted below, nearly hairy, the branches short, lobed. The spikelets are pale-green, shining. The empty glumes are oblong, lance-shaped, acute, smooth. The keel is roughish. The flowering glumes are linear, lance-shaped, rough, blunt. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous perennial. *Koeleria glauca*, D.C. = *v. arenaria*, Dum.—This species or variety occurs in 5 vice-counties from Sutherland to Dorset. The plant differs in having acute, not long, narrow pointed, flowering glumes.

Poa cenisia, All. = *v. flexuosa*, Wahl.—This species has been found in 1 vice-county in Great Britain, but is doubtful.

Limestone False Brome Grass (*Brachypodium pinnatum*, Beauv.).—The habitat of this plant is downs, hedgerows, on dry limestone soils. The plant has the grass habit. The plant is bluish-green. The rootstock is creeping. The stems are numerous, erect, slender, round. The leaves are rigid, nearly hairless, flat, or with inrolled margins, linear lance-shaped. The ligule is short and blunt, fringed with hairs. The sheaths are nearly hairless. The panicle is nearly erect, spike-like, with a flat, smooth rachis, the spikelets small, smooth, first round, alternate in 2 rows (hence *pinnatum*), curved away from the rachis, green and purple. The glumes are hairless, the tips of the flowering glumes shortly curved. The plant is 1-3 ft. high, and flowers in July, being a herbaceous perennial.

ORDER CARYOPHYLLACEÆ (See also p. 90)

Field Mouse Ear (*Cerastium arvense*, Linn.). No seeds of this plant have been found in preglacial beds. Its distribution is Europe, Arctic, N. Africa, Siberia, W. Asia to the Himalayas, N. America, Fucgia, Chili. This species is found in 69 vice-counties in Great Britain, and in Ireland, occurring generally, except in those cited by number (see vol.

I. pp. 67-69, for reference to counties by number), as follows:—1, 2, 4, 5, 9 to 11, 35, 37, 41 to 48, 59, 69, 75, 76, 78 to 79, 84, 88-9, 97 to 112. It is more general south of Inverness, rarer in Scotland and in Ireland.

In its habitat it is much more confined to hilly regions, being found in sandy fields, waste places, in arable fields, sometimes on quite stony ground.

Having a more erect or rigid habit than its nearly ally *Cerastium vulgatum* (Sect. IX), it has short stems with branches 6-10 in. long, tufted ascending, with lateral shoots, and glandular, hairy all round. The leaves are linear, lanceolate, crowded on the basal shoots.

Its flowers are white, larger than in *C. vulgatum*, in many flowered cymes, the 5 petals, bifid, twice as long as the 5 sepals, which are oblong, lanceolate, erect, the sepals and bracts being more or less acute, the tip and margins membranous. The capsules are inclined, a little longer than the sepals, on an erect fruit stalk. The surface of the seeds is covered with acute tubercles.

A perennial species, Field Mouse Ear flowers between April and August.

Pollination is much as in the Greater Stitchwort (see Sect. VI). The flowers being white are conspicuous. The anthers mature as a rule before the stigmas. The honey is half-concealed in nectaries and secreted much as in *Stellaria aquatica* (Sect. VIII). There is every encouragement given in the nature of the floral mechanism and its adaptation to insects for cross-pollination by the agency of insects, but in their absence self-pollination is not precluded. In addition to bisexual flowers there are occasionally smaller ones which have only stigmas, and only degenerate stamens if they have any. It generally has the hermaphrodite and female flowers on different plants, but occasionally the hermaphrodite and female flowers occur on the same plant. Occasionally there are hermaphrodite flowers of two sizes. Insect visitors include various beetles, flies, bees, butterflies and moths, and thysanopterous insects.

Dispersal of the seeds takes place by the aid of the wind, the capsule being open above, and acts as a "censer" fruit, the seeds being jerked out by the wind.

Field Mouse Ear is a sandy-soil plant, and arenophilius.

The fungal and insect pests are few, and as in *C. vulgatum* (qu. vide, *ibid.*).

No other English names have been used for this plant, which is not so well known as the Mouse Ear Chickweed.

It has no medicinal properties, and there is no use to which it has been put so far.

Essential Specific Chars. Stem prostrate, wiry, tufted, leaves linear-lanceolate, downy, petals longer than the calyx, white, bracts membranous on margin and at tip. April to August.

FLOWERS OF THE LAKES, RIVERS, DITCHES, WET PLACES, ETC.

[There is a direct connection between purely aquatic vegetation, or those types of plants that live in water, wholly submerged or floating, or partly submerged, through the last, or the reed swamp, with that marginal vegetation which consists of marsh vegetation, the fen formation, ordinary wet meadows such as rush associations, or even lowland moors or bogs. Hence some proportion of the plants selected for inclusion in this section (more particularly included in those which are found in wet places) are of this last type, or paludal, and not of purely aquatic or lacustral type, though occasionally purely aquatic. In the same way some water plants become terrestrial, by reason of change in the water-level.]

ORDER RANUNCULACEÆ

Rigid-leaved Water Buttercup (*Ranunculus circinatus*, Sibth. = *R. fœniculaceus*, Gilib.).—The habitat of this plant is pools, ditches, streams, ponds, still and slow-flowing water. The plant is not common. The plant, which is dark-green, has the aquatic habit. It is of the submerged type. The stem is submerged. There are no floating leaves. The leaves are small, not stalked, rounded, with rigid lobes in one plane, thrice forked, sheathing, without auricles, and they form a flat rigid disk. The flowers are white, small, with numerous veins, twice as long as the sepals. The receptacle is hairy, not so wide as the flower-stalk. The buds are flattened at the top. There are 15-20 stamens, and they are longer than the pistil. The achenes are flattened, acute. The style, which is slender, falls at length. The plant is submerged. It flowers between June and August, and is a herbaceous perennial.

River Water Buttercup (*Ranunculus fluitans*, Lam.).—The habitat of this plant is running streams and rivers. The plant has the aquatic habit. The stems are long, robust, submerged. The leaves are all submerged, with long, rigid, parallel segments, which are few, narrow, tassel-like, twice or thrice forked. The leaf-stalks and some of the leaf-segments may reach a length of a foot. They are black, and form rigid tassels. Rarely floating leaves, which are 3-lobed or divided, the segments shortly-stalked, are found. The stipules are broad and lance-shaped or rounded. The flowers are large, white, yellow at the base. The flower-stalks are tapering, long, and robust. There may be more than 5 petals, and in 2 rows, broadly inversely ovate, with many veins, contiguous, and they do not fall. The receptacle is conical and smooth. There are numerous short stamens. The stigma is cylindrical, short, and thick. The achenes are large, few, turgid. The plant reaches a length of several feet. It is in flower between May and August, and is a herbaceous perennial.

Ranunculus Drouetii, F. Sch.—The habitat of this species is ponds and ditches. It is of aquatic habit. The stem does not rise out of the water. The submerged leaves are light-green, thrice forked, with limp, tassel-like segments. The floating leaves are rare, and disappear, being 3-partite, the segments more or less stalkless, or stalked, wedge-shaped, divided into two. The upper leaves are more or less stalkless. The lateral segments are stalked, not in the same plane, spreading. The leaves collapse when removed from the water. The whole plant is light-green. The stipules are large, auricled. The flowers are white, starlike, small, the petals 5-7, veined, inversely ovate, soon falling. The buds are oblong. The stamens are few, and longer than the stigma. The latter is oblong, the receptacle oblong. The receptacle in fruit is as thick as the flower-stalk. The achenes are inversely ovate. The plant is floating or submerged. The flowers are in bloom in May and June, and the plant is a herbaceous perennial.

Ranunculus heterophyllus, Weber.—The habitat of this plant is streams and ponds. The plant is of aquatic habit. The stem does not rise out of the water. The submerged leaves are thrice forked, with long segments, tassel-like, spreading. The floating leaves are nearly round, deeply cut into 3-5 wedge-shaped segments, stalked or stalkless. The flowers are white with yellow centres, the petals 7-9-veined, distinct, not falling, inversely ovate to wedge-shaped, longer than the sepals. The receptacle is conical. The flower-stalks are not longer than the leaves. The stigma is not as long as the stamens (which are numerous), and oblong, short, and blunt. The style is hooked. The achenes are smooth or hairy. The plant is floating or submerged. It is in flower between May and July, and is a herbaceous perennial.

Ranunculus lutarius, Boul. = *R. intermedius*, Bab.—The habitat of this plant is damp ground and wet ditches. The plant has a suberect habit, with aerial stems. The leaves are 3 parts rounded, the lateral lobes with 3, the middle with 2-4,

scalloped teeth. The divided leaves are few, rigid, not collapsing, and either floating or aerial. The submerged leaves with flat segments are seldom produced. The floating leaves are somewhat shield-shaped, deeply divided into 3 nearly to the base, the lobes wedge-shaped, inversely egg-shaped, 2-4 fid. The upper stipule is free. The flowers are pinkish-white, the petals little longer than the calyx. The petals may be longer and 5-veined. There are 5-10 stamens. The style soon falls, and is terminal, with a slender base, awl-like. The carpels are unequally inversely egg-shaped, much inflated, with a nearly terminal point. The inner edge is much rounded. The plant is in flower between May and July, and is a herbaceous annual.

Ivy-leaved Water Buttercup (*Ranunculus hederaceus*, L.).—The habitat of this plant is shallow ponds, muddy places. The habit is prostrate. The stem may float (rarely) or creep on the mud. The leaves are opposite as a rule, rounded, heart-shaped, or ivy-like (hence *hederaceus*), with 3-5 shallow, entire, triangular, rounded lobes, widened at the base, and are usually spotted. The flowers are white, the sepals and petals of about the same length. The petals are 3-veined, distant, and narrow. The receptacle is smooth. The stamens are 6-8, as long as the pistil. The achenes are small, few, and blunt. The plant is prostrate. The flowers bloom between May and August. The plant is a herbaceous perennial.

Celery-leaved Crowfoot (*Ranunculus sceleratus*, L.).—The habitat of this species is ditches, muddy places, and ponds. The habit is erect. The stems are robust, succulent, hollow. The root is fibrous. There are submerged leaves which are different to the aerial leaves. The radical leaves are stalked, divided into three, with blunt, scalloped lobes, shining, smooth, the upper ones slightly hairy, and linear. The flowers are small, pale-yellow. The calyx is turned back, the sepals hairy. The honey-glands are round, open, bordered all round, not above. The achenes are smooth, oblong, numerous, wrinkled, furrowed one side. There is a very small style. The plant is 8-24 in. in height, and flowers between May and September. It is a herbaceous perennial.

Ranunculus scoticus, Marshall (= *R. petiolaris*, E. S. Marshall).—The habitat of this plant is Highland lakesides. The plant is closely allied to the Lesser Spearwort, resembling it in habit. The stem is smooth, solitary, suberect, zigzag. The stem does not root at the nodes. The young radical leaves are numerous, small, and do not persist, being without any lamina. The later radical and lower stem-leaves are larger, with or without blunt, oblong to lance-shaped laminae. The upper stem-leaves are linear, lance-shaped, blunt, stalkless, or nearly so. The flowers are yellow, the petals inversely ovate, blunt. The carpels are inversely ovate, and pitted. The plant is 4-12 in. in height, flowering from June to August, and is a herbaceous perennial.

Ranunculus reptans, L.—The habitat of this plant is sandy shores of Loch Leven, &c. The

plant is prostrate in habit. It is very slender, and the stem roots at every arching internode. The leaves are linear, entire. The flowers are very small. The achenes are very small. The style is sub-cylindrical, and bent back. The carpels are bluntly beaked. The plant is 1-4 in. in height, and flowers between June and August. It is a herbaceous perennial.

ORDER NYMPHÆACEÆ

Nymphaea pumila, Hoffm.—The habitat of this water-lily is small Scottish lakes. The plant has the water-lily habit, being aquatic, resembling the Yellow Water-lily, from which it differs in the smaller, more-rounded petals, and shorter anthers. The leaves are heart-shaped, oblong, 2-lobed below, the lobes distant, spreading at length. The submerged leaves are thin and transparent, wavy, kidney-shaped. The leaf-stalk is 2-edged. The flowers are small and yellow. There are 5 sepals. The stigma is rayed at the margin, with 8-10 rays, and these form acute teeth. The anthers are oblong, not twice as long as broad. The capsule is furrowed above. The plant is floating. The flowers are in bloom from June to August. The plant is a herbaceous perennial.

ORDER CRUCIFERÆ

Creeping Yellow Cress (*Radicula sylvestris*, Drue = *R. pinnata*, Moench).—The habitat of this plant is moist waste places, watery places. The habit is creeping, then erect. The rootstock is creeping. The stem is wavy and angular. The leaves are divided to the base, each side of a common stalk, with numerous oblong, lance-shaped leaflets, the uppermost leaves sometimes nearly entire. The flowers are in short racemes. They are yellow, with petals twice as long as the calyx. There are six disk-glands. The pods are linear, on spreading stalks, and are spreading or ascending, as long as the stalks or shorter. The seeds are very small, hardly in 2 rows. The plant is 9-18 in. in height, and flowers between June and August. It is a herbaceous perennial.

Land Yellow Cress (*Radicula palustris*, D.C. = *N. terrestre*, Br.).—The habitat of this plant is damp places. The habit is erect or ascending. The stems are erect or ascending. The roots are fibrous. The leaves are deeply divided nearly to the base, or with lobes each side of a common stalk, the lobes few, broad, oblong, toothed, unequally cut, the terminal leaflet of the lower leaves the largest. The flowers are small, yellow, the petals not longer than the sepals. There are 4 disk-glands. The pods are short, turgid, linear-oblong, thick, ascending, as long as the stalks, which are spreading or bent down. The seeds are angular. There is a short style. The plant is 6-18 inches. It flowers between June and October, and the plant is a herbaceous perennial.

Barbarea stricta Fr. (= *B. parviflora*, Fr.).—The habitat of this plant is river-banks, &c. The

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plant has the rosette habit, with an erect stem. The radical leaves are lyrate, the terminal lobe larger, the upper pair of lobes small, shorter than the breadth of the terminal lobe, which is large and oblong to egg-shaped. The lateral lobes of the lower leaves are small. The upper leaves are entire, toothed. The flowers are smaller than in *B. vulgaris* (hence *parviflora*), in a close, narrow raceme, the flower-stalks erect. The petals are half as long again as the sepals. The flowering buds are downy. The pods are short, closely pressed, with an awl-like point. The plant is 1-2 ft. high, flowering from May to July, and is a herbaceous biennial.

Hairy Bitter Cress (Cardamine hirsuta, L.).

The habitat of this plant is moist places and open ground. The plant has more or less the rosette habit. The stem is not wavy, stiff, erect and leafy. The radical leaves form a rosette. The leaves are pinnate, with the leaflets of the lower leaves round, angular, or toothed, those of the upper leaves narrower, oblong, entire, oval, cut. There are no stipules. The flowers are white, with erect petals, which are twice as long as the calyx. There are 4 stamens. The style is short, stout, equal to or half the breadth of the pod. The pods are erect, as are the stalks. The plant is from 6 in. to 2 ft. in height. The flowers are in bloom between April and September. The plant is a herbaceous perennial.

Common Bitter Cress (Cardamine amara, L.).

The habitat of this plant is river-sides, moist meadows near streams, watery places. The habit is as in the last. The rootstock is slender, however, and bears stolons. The stem is ascending, angular, smooth or hairy. The leaves are alternate, pinnate. The leaflets in the radical leaves are more or less round or ovate, those of the stem narrow, oblong, deeply toothed. The stem-leaves have angular leaflets. The flowers are creamy-white, and large. The petals are three times the length of the calyx, and erect, large, inversely ovate, spreading. The stamens are as long as the petals. The anthers are purple or violet. The style is long and slender. The stigma is small. The pods are erect, and borne on slender stalks. The plant is 1-2 ft. in height, and flowers from April to June. It is a herbaceous perennial.

Horse-radish (Cochlearia Armoracia, L.).—The habitat of this plant is ditches, corners of fields, river-banks, waste places. The plant is tufted in habit. There is a stout, long, cylindrical root-stock. The leaves are linear to oblong, blunt, scalloped. The radical leaves are long, stalked, wavy, with reticulate veins, heart-shaped, wedge-shaped, or unequal below. The stem-leaves are stalkless, lance-shaped, serrate, toothed. The young leaves are pinnate. The flowers are borne in racemose panicles, and are white, the petals twice as long as the calyx. The style is slender, the stigma is large and shield-shaped, pin-headed. The pods do not ripen in the British Isles, the immature ones being inversely ovoid, borne on long, slender stalks. The pouch is ovoid, 4-seeded. The plant is 2-3 ft. in height. It is in flower

in May and June, and is a herbaceous perennial.

Awlwort (Subularia aquatica, L.).—The habitat of this species is gravelly bottoms of subalpine lakes in N. Wales. The habit is the loose rosette habit. The plant is small and submerged. The root consists of numerous densely tufted, long, white fibres. The leaves are radical in tufts, round in section, linear, tapering to an awl-like point, and are cellular. The flowers are few, small, white, submerged, borne on a naked scape. The pods are oblong, with few seeds, and small, borne on short, ascending stalks. The pale-brown seeds are minutely dotted. The plant is 1-3 in. in height, and flowers from June to August. It is a herbaceous perennial.

ORDER CARYOPHYLLACEÆ

Bog Stitchwort (Stellaria uliginosa, Murray).

—This plant is indigenous, and is found in wet places, ditches, by streamlets, and bogs. The habit is prostrate or erect. The whole plant is bluish-green, more or less devoid of hairs. The stem is 4-angled, spreading, much-branched. The leaves are ovate, lance-shaped, oblong, acute, narrowed both ends, the tip hard, fringed with hairs below, soft. The flowers are few, in cymes. The bracts have a smooth, membranous border. The calyx has a funnel-shaped tube, with narrow, long-pointed, 3-veined sepals. The petals are not so long as the latter, 2-partite. The capsule is ovoid, about as long as the calyx. The seeds are very small. The plant is 3-18 in. in height. It flowers from May to July, and is a herbaceous perennial.

ORDER ELATINACEÆ

Waterwort (Elatine hexandra, D.C.).—The habitat of this plant is margins of ponds, lakes, pools. The plant is of aquatic habit. The stems form a matted mass under water, and are limp, rooting at the nodes. The plant is creeping, and very small. The leaves are opposite, longer than the leaf-stalks, spoon-shaped. The flowers are rose-colour, have the parts in threes, borne on short stalks, in the axils, alternate. The calyx is 3-fid, with unequal sepals. There are 3 inversely ovate petals, longer than the sepals. The stamens are 6 in number. The capsule is top-shaped, with 8-12 straight seeds, which are ascending, the capsule concave above, 3-celled. The plant is 1-3 in. in height, and flowers between July and September, being a herbaceous annual.

Elatine Hydropiper, L.—The habitat of this plant is muddy ponds. The habit is as in the last. The plant is small and creeping. The leaves are opposite, not so long as the leaf-stalks. The flowers are rose-colour, the parts in fours, stalkless, with 8 stamens, the calyx 4-fid, and with 4 ovate petals. The capsule is nearly round, depressed, 4-celled. The seeds are curved, nearly double, pendulous, hooked, 4 in each cell. The plant is floating or submerged, 1-3 in. high, flowering in July and August, and is a herbaceous annual.

ORDER HYPERICACEÆ

Hypericum maculatum, Cr.—The habitat of this plant is moist places. The plant differs from *H. quadrangulum* (q.v.) in the leaves, which are narrower, and the sepals, which have small teeth; and the latter are turned back, with many black dots on the outside. For other details see the above species, which this one resembles in other respects.

Square-stalked St. John's Wort (*Hypericum quadrangulum*, L.).—The habitat of this plant is copses, wet and moist places. The habit is erect. The stems are 4-angled (hence *quadrangulum*), and erect. The leaves are broad, elliptic, ovate, oblong, rounded, with few or no pellucid dots or glands, blunt. The upper leaves are half-clasping, the veins and net-like connections being pellucid. The flowers are yellow, cymose, with sepals erect or bent back, oblong or lance-shaped. The petals are broad and glandular. The style is half as long as the capsule. The carpels have many vittæ. The capsule opens by septa. The seeds are oblong. The plant is 1-2 ft. in height, flowering from July to September, and is a herbaceous perennial.

Hypericum tetapterum, Fr. = *H. quadratum*, Stokes = *H. acutum*, Moench.—The habitat of this plant is moist places. The habit is as in the last. The stem is erect, 4-angled, with narrow wings. The leaves may be heart-shaped below, broadly ovate, oblong, with pellucid glands and dots, and reticulations. The flowers are yellow and form a dense cyme. The sepals are lance-shaped, erect, with glands, long-pointed. The styles are not as long as the capsule, which has many vittæ. The plant is 1-2 ft. in height, and flowers in July and August, being a herbaceous perennial.

ORDER ROSACEÆ

Rubus lacustris, Rogers.—The habitat of this plant is lakes and streams and hedges. The habit is slightly arching. The stem has fine, numerous, long, white hairs, and is somewhat furrowed. The prickles are numerous, short, with a stout base. The leaves are 5-lobed, small. The leaflets are narrow, sharply toothed, with compound teeth towards the point. The panicle is rather broadly cylindrical, with many strong, turned-down, and sickle-like prickles and pricklets. The flowers are numerous, handsome, and star-like in sunshine. The stamens are numerous and long, exceeding the green styles. The plant resembles *R. Lindebergii*, differing in the weak, slightly-furrowed stem, narrow, thin leaflets with compound teeth above, and many broad compound panicles.

ORDER SAXIFRAGACEÆ

Alternate-leaved Saxifrage (*Chrysosplenium alternifolium*, L.).—The habitat of this plant is banks of streams and wet places. The plant is erect in habit, branched at the top, otherwise simple, tufted, smooth above, with soft white

hairs below. The radical leaves have long stalks, kidney-shaped, scalloped with notched crenatures. The stem-leaves are few, with acute crenatures. The leaves are alternate (hence *alternifolium*). The flowers are deep-yellow, and form an umbel, or dense cyme, being nearly stalkless. The parts are in fours. The sepals are blunt and spreading. The capsule is nearly inferior, with short beaks. There are 8-12 stamens. The plant is 2-4 in. in height, flowering in April and June, and is a herbaceous perennial.

ORDER HALORAGACEÆ

Mare's Tail (*Hippuris vulgaris*, L.).—The habitat of this plant is margins of lakes, ponds, &c., stagnant water, slow streams, ditches. The habit is erect. The stems are erect, simple, or branched below. The rootstock is submerged, stout, and creeping. There are long, limp, submerged, transparent leaves, which are thin and broad, without hard tips. The leaves are close, in whorls, 6-12, linear, acute, with a hard point. The flowers are borne in the axils of the leaves, and are green, apetalous, stalkless. The anthers are red. The fruit is a drupe, green, smooth, and very small. The plant is 6-24 in. in height, flowering in June and July, and is a herbaceous perennial.

Whorled Milfoil (*Myriophyllum verticillatum*, L.). The habitat of this species is ponds, ditches. The habit is aquatic. The rootstock is creeping. The stems are floating, leafy. The leaves are in whorls, 5 in a whorl, divided nearly to the base, with awl-like segments, distant, hair-like, collapsing when moved from the water. The spike is long, erect in bud, the flowers white, in axillary whorls. The bracts are in whorls of five, divided nearly to the base, or pectinate, longer than the flowers. There are no flowers in the upper axils. The anthers are linear. The fruit is nearly round, green, with carpels round on the back. The plant is floating, or submerged, flowering in July and August, and is a herbaceous perennial.

Alternate-leaved Milfoil (*Myriophyllum alternifolium*, D.C.).—The habitat of this plant is ponds and ditches, streams, &c. The habit is aquatic. The plant has the same habit as the next, but is more slender. The leaves are in whorls of 3, submerged. The flowers are borne on a leafless spike, curved at the tip in bud, then erect, the sterile flowers alternate, 6, and the fertile flowers are about 3 in axillary whorls below. The bracts of the female flowers are pectinate, in whorls of 3 or 4, longer than the flowers. Those of the male flowers are alternate or opposite, entire or serrate, shorter than the flowers. The flowers are not so numerous as in the next species. The plant is submerged. It flowers from June to August, and is a herbaceous perennial.

Spiked Milfoil (*Myriophyllum spicatum*, L.).—The habitat of this plant is ponds and ditches. The habit is as in the Whorled Milfoil. The leaves are four in a whorl. The flowers are borne in a spike, erect in bud, and the bracts are small,

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entire, whorled, in fours, shorter than the flowers. The lower bracts may be pectinate. The fruit is hardly rounded. The plant is submerged. It flowers from June to August, and is a herbaceous perennial.

Water Starwort (*Callitricha verna*, L.=*C. palustris*, L.).—The habitat of this plant is ponds, ditches, sluggish streams. The habit is aquatic. The stem is round in section, little branched, submerged. The leaves are inversely ovate to spoon-shaped, the floating ones forming a rosette, 3-nerved, or rarely wanting, narrowed at the base, with submerged, linear leaves. The flowers are in the axils, male and female in opposite axils. The bracts are white, straight, and soon fall, being bent inwards. The fruit is nearly stalkless, longer than broad, with parallel lobes, bluntly keeled on the back, convex on the sides, united below for half their length. There is a hollow furrow which is not extended to the base. The anther-stalks are very slender. The plant is 3-12 in. in height, flowering between April and October, and is a herbaceous perennial.

Callitricha stagnalis, Scop.—The habitat of this plant is ponds and ditches. The habit is as in the last. The leaves are all similar, narrow at the base, inversely ovate to spoon-shaped, the floating leaves forming a rosette, which, however, may not develop. The flowers are as in the last, with sickle-like, persistent bracts. In flower the styles are erect and persistent, turned back in fruit. The fruit is nearly stalkless, with lobes winged on the back, twice as large as in *C. verna*, and when dry pale in colour. The lobes are slightly spreading. The plant is floating or submerged. Flowers may be found between April and September. The plant is a herbaceous annual or perennial.

Callitricha polymorpha, Lonnر.—The habitat of this plant is watery places. In habit the plant resembles *C. stagnalis*. The fruit, however, is not so large and is hardly winged. The lower leaves are linear, notched. The upper leaves are roundly spoon-shaped, and form a rosette. The flowers are as in the last, with sickle-like, persistent bracts. The fruit is as small as in *C. verna*. It is almost stalkless, with lobes scarcely winged on the back, and keeled. The style is erect in flower, turned back in fruit, very long, 2-3 times as long as the fruit. The plant is floating or submerged. It is in flower between June and September, and is a herbaceous annual or perennial.

Callitricha intermedia, Hoffm. (= *C. hamulata*, Kutz.).—The habitat of this plant is lakes and streams, &c. The plant has the Starwort habit. The leaves are linear, the upper broader in the middle, the uppermost oblong, spoon-shaped. The bracts overlap, and are hooked, and do not persist. The styles are long, spreading, and at length turned back over the side of the fruit. The pollen is more or less round. The fruit is stalkless, with a blunt dorsal ridge, flat one side, broader than long, the lobes are parallel with the dorsal ridge, and there is a shallow furrow. The

plant is floating or submerged. It flowers between April and September, and is a herbaceous annual or perennial.

Callitricha obtusangula, Le Gall.—The habitat of this plant is ponds and ditches. The plant has the Starwort habit. The leaves, which are all inversely ovate, form a rosette. The bracts are persistent. The styles are spreading, or erect, and do not fall. The fruit is large, blunt, hardly stalked. The lobes are parallel with the rounded edges. The carpels are swollen, obtusely 3-angled on the back. The plant is floating or submerged. It is in flower between April and September, and is a herbaceous annual or perennial.

Callitricha truncata, Guss.—The habitat of this plant is ditches. The leaves are all of the same type, and are enlarged at the base, and linear. They are all submerged, very blunt at the end, and of a clear, green colour. There are no bracts. The styles are bent back or spreading. The fruit consists of 4 nearly equal lobes, and is shortly-stalked, the lobes having a blunt dorsal ridge, being keeled. The plant is floating or submerged. It flowers between June and September, and is a herbaceous annual or perennial.

Callitricha autumnalis, L.—The habitat of this plant is lakes, especially in North Britain. The leaves are all of the same type, enlarged below, linear, dark-green, submerged, blunt at the end. There are no bracts. The styles are spreading. The fruit is stalkless, four times as large as in *C. verna*, dark-brown, with one or two abortive lobes. The carpels are keeled or winged, united towards the axis only. The lobes have broad and acute wings on the back. The plant is submerged. It flowers between June and October, and is a herbaceous annual or perennial.

ORDER LYTHRACEÆ

Hyssop Loosestrife (*Lythrum hyssopifolia*, L.).—The habitat of this plant is moist places, often liable to inundation, just where one might expect to find Water Purslane, but it is very local. The habit is prostrate, or ascending, spreading, simple or branched. The leaves are alternate, linear to lance-shaped, blunt. They are stalkless, and wedge-shaped below, very narrow. The flowers are small, solitary, pink or purplish, in the axils. There are 2 minute, awl-like bracts. The calyx-teeth are short, awl-like. The petals are oblong. There are 6 stamens. The capsule is cylindrical. The plant is 6-18 in. in height, and flowers between June and September, and is a herbaceous perennial.

ORDER EPILOBIACEÆ

Downy Willow Herb (*Epilobium parviflorum*, Schreber).—The habitat of this plant is ditches and river-banks, watery places. The plant has the willow-herb habit, or more or less that of a rosette below, with erect stem. There are autumnal stolons, with more or less stalkless, or stalked, rosettes of leaves. The root is fibrous. The stem is downy, round in section, branched above, or

more or less simple. The leaves are stalkless, more or less alternate, lance-shaped, with a rounded base, toothed. The radical leaves have short stalks. The flowers are small, with erect, ovoid buds, rose-purple, numerous. The sepals are lance-shaped. The lobes of the stigma are short and not turned back. The capsule is nearly smooth or downy. The seeds are tubercular, inversely ovate to oblong, rounded below. The plant is 1-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Epilobium collinum, C. Gmel.—This species is a doubtful one, and has been referred to *E. monatanum*. It was found in Scotland.

Square-stalked Willow Herb (*Epilobium tetragonum*, L. = *E. adnatum*, Griseb.).—The habitat of this species is wet places. The habit is as in the last. There are dense, stalkless rosettes. The plant is downy above. The stem has 2 or 4 raised lines, or is round, and is erect, much-branched, rough, and strong. The leaves are stalkless, those below the branches opposite, sometimes shortly - stalked, running down the stem. They are strap-shaped, linear to oblong, ovate, toothed, shining below. The buds are erect, acute. The flowers are purplish-rose colour, or lilac, erect. The pods are 2-4 in. long. The seeds are oblong to inversely ovate, tubercular. The plant is 1-2 ft. in height, and flowers in July and August, being a herbaceous perennial.

Epilobium obscurum, Schreber.—The habitat of this species is damp places. The habit is as in the last, which it resembles except in the shorter capsule and foliage. The autumn stolons have few distant pairs of opposite leaves. The leaves are ovate to lance-shaped, tapered from a rounded base, and are stalkless, remotely toothed. The lower leaves are oblong, blunt, not shining above. The buds are erect. The capsule is more or less erect or spreading. The seeds are oblong to inversely ovate. The plant flowers in July and August, and is a herbaceous perennial.

Epilobium Lamyi, F. Schultz.—The habitat of this plant is woods and roadsides. The plant forms dense rosettes. The leaves are lance-shaped, finely or coarsely toothed, rounded below, sometimes with a short leaf-stalk, bluish-green, acute, closely downy. The flowers are larger than in *E. tetragonum*. The buds are erect. The plant is 1-3 ft. in height. It flowers in July and August, and is a herbaceous perennial.

Marsh Willow Herb (*Epilobium palustre*, L.).—The habitat of this plant is bogs, ditches. The habit is as in the other members of the group. The summer stolons are subterranean, slender, scaly, with scaly buds in autumn, and are long-jointed, with very small leaves, which end in bulbs in autumn, becoming detached. The stem has a cordlike base, roots near the base, and is round in section, with two lines of felt. The leaves are not stalked, and are lance-shaped, nearly all opposite, limp, spreading, with few teeth, with a narrow, blunt tip. The leaves are wedge-shaped at the base. The flowers are in a raceme, nodding at the top, rose or lilac. The buds are blunt, nodding.

The sepals are lance-shaped. The capsule is downy. The seeds are spindle-shaped, narrower, narrow and acute below, with the testa prolonged. The plant is 6-24 in. in height. It flowers in July and August, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

Least Marshwort (*Apium inundatum*, H. G. Reichb.).—The habitat of this plant is wet places, ponds, pools, &c. The habit is prostrate, submerged, or floating. The plant is limp, small, straggly. The stem is frequently submerged, wavy, fairly thick. The floating or submerged leaves are twice or thrice pinnate. The lower leaves are hair-like, much divided, 3-cleft, linear, and some of the upper leaves rise above the surface. When growing on the mud not in water the leaves are all much broader, with wedge-shaped segments, 3-cleft. The small white or pinkish flowers are in small umbels of 2 or more unequal rays, with a leaf opposite each, on short flower-stalks. There are no bracts. There are 4-6 lance-shaped, 3-nerved bracteoles. The petals are in-bent. The fruit is more or less stalkless, elliptic to oblong. The styles are bent-back. The plant is 4-10 in. in height, and flowers in June and July, being a herbaceous perennial.

Water Hemlock or Cowbane (*Cicuta virosa*, L.).—The habitat of this plant is watery places, ponds, ditches, peaty pools. The habit is erect. The rootstock is short, stout, with septa. The roots are fibrous and slender. The stem is hollow below, furrowed, round in section, thick, leafy. The leaves are large, triangular, the radical leaves twice or thrice pinnate, borne on stout leaf-stalks, those of the lower leaves long. The leaflets are linear to lance-shaped, acute, doubly coarsely toothed, and run down the stem, being oblique. The flowers are small, white, in large, flat umbels, with no general involucre, or one or 1-2 slender bracts, the partial involucre consisting of numerous short, slender, awl-like bracteoles. The calyx-teeth are ovate. The fruit is broader than long. The slender styles are bent-back. The plant is 2-4 ft. high, flowering in July and August, and is a herbaceous perennial.

Water Parsnip (*Sium latifolium*, L.).—The habitat of this plant is watery places, ditches, rivers, river-sides. The habit is erect. The rootstock is short, and bears stolons. The stem is erect, stout, hollow, angular, grooved, and branched above. The leaves are large, pinnate, with 9-13 large, stalkless, distant leaflets, which are linear to oblong, acute, lance-shaped, equally toothed. The submerged leaves are much-divided. The flowers are small, white, the outer larger, in large, flat, terminal umbels, the rays numerous. The flowerheads, at first erect, turn sideways. The involucral bracts are lance-shaped. The bracteoles are leafy and large. The style is slender. The fruit is broadly ovoid, with prominent ridges. The plant is 3-6 ft. high, flowering in July and August, and is a herbaceous perennial.

Narrow-leaved Water Parsnip (*Sium angusti-*

folium, L.=*S. erectum*, Huds.).—The habitat of this plant is wet places, ditches, &c. The habit is erect. The rootstock is creeping, with stolons, bearing leaves at the joints. The stem is leafy, round, finely furrowed, erect. The leaves are pinnate, large, with the leaflets in the radical leaves stalkless, regularly toothed, ovate to oblong, those of the upper leaves irregularly coarsely toothed, lance-shaped, few, smaller. The flowers are small, with few lateral umbels, with a leaf opposite. The rays are few and unequal. The bracts are numerous, lance-shaped, entire or irregularly lobed. The fruit is not so long as in the last, with fewer vittæ, and conical disk-lobes. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Horsebane (*Enanthe Phellandrium*, Lam. = *E. aquatica*, Poir.).—The habitat of this plant is ponds and wet ditches, pools in peaty places. The plant is erect in habit, or floating and ascending. The stem is erect, spindle-shaped below, thick, stoloniferous, the flowering shoot dying down each year, the plant being continued by offsets. The leaves are twice or thrice pinnate, finely divided, the segments much divided, the submerged leaves hairy, with spreading, hair-like segments. The aerial leaves have broad, small, blunt lobes, ovate, cut, spreading, the segments numerous, acute, pale-green. The flowers are white, in lateral umbels, opposite the leaves, with 7-10 rays, and numerous bracteoles. The outer florets are sometimes irregular. The fruit is round in section, ovate, narrow to oblong, twice as long as the styles, which are slender and wavy. The ultimate flower-stalk is not thickened above. The plant is 1-4 ft. high, flowering from July to September, and is a herbaceous perennial.

ORDER VALERIANACEÆ

Valerian (*Valeriana sambucifolia*, Mikan).—The habitat of this plant is wet meadows, banks of streams, river-sides, damp woods. The habit is erect. The plant resembles *V. officinalis* (*V. mikanii*), of which it has been considered a variety, but here there are 4-6 pairs of lance-shaped leaflets, which are toothed all round. The leaves are pinnate, alternate. The leaflets in the radical leaves are ovate to acute, those of the stem-leaves oblong to lance-shaped, toothed on both edges. The terminal leaflets of the radical leaves are sometimes the largest. The plant produces large stolons. The plant is 2-4 ft. in height. The flowers bloom from June to August, and the plant is a herbaceous perennial.

ORDER COMPOSITÆ

Pearl Everlasting (*Antennaria (Anaphalis) margaritacea*, C. B. Clarke).—The habitat of this plant is stream-sides. The plant has more or less the shrub habit. The stem is erect, stout, cottony, branched above, leafy. The leaves are linear to lance-shaped, acute, clothed with white and buff cottony down, more so below, and are alternate,

stalkless, half-clasping. The flowers are yellow or brownish-white, the heads of the male florets rounded, those of the female bell-shaped, borne in a compound corymb. The involucle is white. The involucral bracts are oblong, brown below, white above, and radiating. The plant is 2-3 ft. in height, and flowers in July and August, being a herbaceous perennial.

Marsh Cudweed (*Gnaphalium uliginosum*, L.).—The habitat of this plant is damp places, especially on light soils, wet sandy places, moist places generally. The habit is erect. The whole plant is cottony above, rarely hairless. The stems are numerous, erect, prostrate below, or ascending, much-branched. The leaves are narrow, linear to lance-shaped, swollen upwards, acute or blunt, cottony both sides, and the leaf-stalk does not clasp the stem. The flowerheads are yellowish-brown, collected in terminal, dense clusters, not so long as the leaves, at the end of the stem and branches. The involucle is yellowish-brown, the bracts narrow, more or less acute. The achenes are very small and smooth. The plant is 2-6 in. in height, flowering between July and September, and is a herbaceous annual.

Bur Marigold (*Bidens cernua*, L.).—The habitat of this plant is watery places. The plant is erect in habit. The stems are stout, succulent, round in section, branched above, leafy, with opposite branches. The leaves are in pairs, united below, stalkless, entire, oblong to lance-shaped, coarsely toothed. The flowerheads are drooping, solitary, terminal. The flower-stalks bear no bracts. The outer phyllaries are spreading, or turned back, leafy, the inner not so long, broadly oblong, blunt, with black streaks. The florets are brownish-yellow. There are few ray florets, which are broad, or wanting. The fruit is wedge-shaped, with 3-4 bristles, narrow to inversely ovoid. The pappus bristles are barbed. The plant is 1-2 feet high, and flowers from July to October, being a herbaceous perennial.

Broad-leaved Ragwort (*Senecio sarracenicus*, L.).—The habitat of this plant is river-sides, moist meadows, watery places. The plant is erect in habit. The rootstock, which is creeping, bears stolons. The stem is solid, stout, erect, leafy, smooth. The leaves are smooth, linear to oblong, stalkless, acute, irregularly toothed, the lower leaves being shortly-stalked, the lowest half-clasping and auricled. The flowerheads are numerous, in loose, terminal, downy corymbs, with a short flower-stalk, bearing bracts. The involucle is broadly bell-shaped, the outer phyllaries awl-like, the inner linear-oblong, with brown tips. There are few (6-7) ray florets. The florets are yellow. The fruit is smooth. The plant attains a height of 3-5 feet. It flowers in July and August, and is a herbaceous perennial.

ORDER CAMPANULACEÆ

Water Lobelia (*Lobelia Dortmanna*, L.).—The habitat of this plant is gravelly mountain lake-bottoms. The plant has the rosette habit. The

rootstock is fleshy, short, and bears slender stolons. The fibres of the roots are white and cellular. The simple aerial stem is a more or less leafless scape. The radical leaves are submerged, more or less cylindrical, with two hollow, parallel cavities or tubes, linear, blunt, entire, bent-back. The scape is hollow and bears bracts below. The flowers are pale-blue, distant, in a loose raceme, aerial or raised above the water. The flower-stalks are short. There are short, oblong, blunt bracts. The calyx is inversely conical, round, with short, blunt lobes. The corolla-segments are linear, blunt, the upper ones are erect, the lower longer. The anthers are included. The capsule is club-shaped and inclined. The plant is 1-2 ft. in height, flowering in July and August, and is a herbaceous perennial.

ORDER PRIMULACEÆ

Brookweed (*Samolus Valerandi*, L.) — The habitat of this plant is wet ground, ditches, often near the sea, damp watery places. The plant has the rosette habit. There is a short rootstock. The stem is erect, with prostrate or ascending branches, rooting at the base. The radical leaves form a rosette. The leaves are inversely ovate or spoon-shaped, blunt or shortly pointed, entire, fleshy. The stem-leaves are alternate. The flowers are numerous, white, borne on an erect raceme. The ultimate flower-stalks ascend. The bracts are adnate above the middle, small, and lance-shaped. The tube of the calyx is hemispherical, with triangular, acute lobes, and adheres to the ovary. The corolla-lobes are short and blunt, the corolla small, with a crown. The stamens are included. The capsule is round, with rough seeds. The plant is 1-2 ft. in height, usually 8-12 in. It flowers from June to September, and is a herbaceous perennial.

ORDER GENTIANACEÆ

Yellow Water Villarsia (*Limnanthemum peltatum*, Gmel. = *Nymphoides peltatum* = *Villarsia nymphæoides*, Vent.). — The habitat of this plant is still waters, and rivers. The plant has the aquatic habit, with floating leaves, and submerged stems. The rootstock is creeping, with alternate leaves. The flowering stems are floating, with short branches in the axils of opposite leaves. The stems are long, round, branched. The leaves are floating, round, or heart-shaped at the base, stalked, entire, green, shining, with purple spots, purplish, with glands below, with wavy border. The radical leaves are long-stalked, slender, without sheaths, those of the floating leaves not so long, stout, with sheaths. The flowers are yellow. The flower-stalks bear a single flower, and are clustered, crowded. The flowers are more or less umbel-like, and open successively. The sepals are linear to oblong, blunt. The corolla has the lobes fringed with hairs, notched, or fimbriate. The fruit, a capsule, is like a flagon in shape, 3-valved, green. The seeds are few,

winged, fringed with hairs. The plant is floating, flowering in July and August, and is a herbaceous perennial.

ORDER BORAGINACEÆ

Comfrey (*Symphytum officinale*, L.). — The habitat of this plant is river-banks, watery places. The plant is erect in habit. It is roughly hairy all over. There is a branched rootstock. The roots are fibrous and fleshy. The stem is stout, angular, branched, broadly winged at the top. The leaves are ovate to lance-shaped, narrow below, the radical leaves with a long winged leaf-stalk, are shortly-stalked, and running down the stem. The flowers are yellowish-white or purple (*S. patens*), in racemes or scorpioid cymes in pairs, drooping. The sepals are narrow to lance-shaped, spreading, more downy in the purple-flowered type. The nutlets are shining. The plant is 1-3 ft. high, flowering in May and June, and is a herbaceous perennial.

Tufted Scorpion Grass (*Myosotis cespitosa*, K. F. Schultz). — The habitat of this plant is watery or wet places. The habit is prostrate, then ascending. The rootstock is short, and there are no stolons. The plant has a felt of distant appressed hairs. The stem is much branched, round, with a line running down the stem, the branches slender. The leaves are bright, shining-green, the radical ones spoon-shaped to oblong, polished. The stem-leaves are linear to oblong, with a rounded tip, blunt or notched, narrowed to the stalkless base. The flowers are bright-blue, in a raceme, or long cyme, slender, leafy below. The sepals have straight, closely pressed hairs, and are blunt, triangular, oblong to ovate, as long as the tube. The corolla has a yellow disk or centre. The style is not so long as the calyx. The nutlets are black, short, broad, bordered, not keeled in front. The plant is 6-18 in. in height, flowering between May and August. It is a herbaceous perennial.

ORDER PLANTAGINACEÆ

Shoreweed (*Littorella lacustris*, L. = *L. uniflora*, Asch. = *L. juncea*, Berg.). — The habitat of this plant is sandy and gravelly edges of lakes and ponds, sometimes below water, when it is barren. The habit is tufted. The plant is smooth or downy, and may form a matted mass when submerged. The rootstock is white, creeping, and bears stolons. The leaves, which are all radical, are linear to awl-like, sheathing below, fleshy, channelled, sometimes having hair above. The plant is monoecious. The flowers are white. The male flowers are borne on an axillary scape, not so long as the leaves, and are solitary, and stalked (1-2 in.), with 1-2 bracts below the middle. The sepals are green, with membranous edges, blunt. The female flowers are more or less stalked, with lance-shaped bracts. The fruit is bony, with erect seeds. The plant is 1-3 in. in height. It flowers in August, and is a herbaceous perennial.

BRITISH FLORA

ORDER SCROPHULARIACEÆ

Mudwort (*Limosella aquatica*, L.).—The habitat of this plant is the margins of ponds, muddy places where water has lain. The habit is the rosette habit. The rootstock is slender, creeping, rooting. The plant is very small. There is no stem, except the underground or creeping stolons. The leaves are narrow, oblong to lance-shaped, or spoon-shaped, tufted, long-stalked. The flowers are small, white, or rose-coloured, on axillary stalks, not so long as the leaves, or leaf-stalks, bent back in fruit. The capsule is ovoid and very small. The plant is 1-4 in. in height, flowering between July and September, and is a herbaceous annual.

Water Speedwell (*Veronica Anagallis-aquatica*, L.).—The habitat of this plant is watery places. The plant is prostrate then ascending in habit. The plant is stoloniferous, devoid of hairs, erect, stout, hollow, succulent. The stem is simple or bears a few branches. The leaves are stalkless, half-clasping, ovate, oblong to lance-shaped, coarsely toothed, with small teeth, and auricled. The flowers are pale-blue, in slender, sometimes glandular, ascending, opposite racemes, which lengthen in fruit. There are lance-shaped bracts, as long as the ultimate flower-stalks. The sepals are ovate to lance-shaped, more or less acute, smooth or glandular. The fruit-stalks are spreading. The capsule is elliptical, oval, notched, turgid, not so long as the sepals. There is a medium-sized style. The seeds are small, biconvex. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER LENTIBULARIACEÆ

Utricularia neglecta, Lehmann. (= *U. major*, Schmidt).—The habitat of this plant is pools in healthy places. Similar to *U. vulgaris*, this species was formerly regarded as a sub-species. There is a slender stem and scape. The leaves are not so large as in the last, more distant. The stems are slender, or hairlike. The leaves are nearly round, with awl-like, entire segments, pinnate, and much-divided, fringed with hairs in places. On the leaves are the small bladders, which are shortly-stalked. The scape is very slender. The corolla is pale-yellow, borne on slender stalks, 4-5 times as long as the lance-shaped bract, with a spur which is conical, directed upwards, and projecting, ovate to oblong, blunt or notched, not closely pressed to the upper lip. The upper lip is 2-3 times as long as the palate. The lower lip has a broad, flat, spreading margin. The flower-stalks are ascending in fruit. The plant is 6-8 in. in height, flowering between June and August, and is a herbaceous perennial.

Smaller Bladderwort (*Utricularia minor*, L. = *U. ochroleuca*, R. Hartm.).—The habitat of this plant is pools, ditches, pits. The habit is as in the last, and *U. vulgaris*. The stems are thread-like. The leaves are regularly forked in two parts, much-divided, loose, broad, round, with

awl-like, entire segments, not fringed with hairs. The pitchers have slender stalks. The scapes bear 2-6 small flowers, pale-yellow. The flower-stalks are 2-3 times as long as the calyx, bent down in fruit. The upper lip of the corolla is as long as the small palate, the lower broadly ovate, with a flat spreading margin. The spur is very short, small, and blunt. The sepals are round, long-pointed. The anthers are free. The plant is 3-10 in. in height, flowering from June to September, and is a herbaceous perennial.

Utricularia intermedia, Hayne.—The habitat of this plant is pools, ditches, bogs, pits. The habit is as in the last. The stem is slender. The leaves are in 2 rows, close, repeatedly forked, much-divided, 3-partite, broad, round, with awl-like, linear segments, with a fringe of distant hairs. The pitchers are on slender stalks, on leafless branches. The scape is stout. The flower-stalks are as long as the calyx. The flowers are pale-yellow. The upper lip is longer by twice than the swollen palate. The lower lip has a broad and flat, spreading margin. The spur is closely pressed to the lower lip, and is conical and acute. The flower-stalk is 4-5 times as long as the ovate bract, and erect in fruit. The plant is 4-8 in. in height, and flowers between July and September, being a herbaceous perennial.

Utricularia Bremii, Heer.—This species is found in Scotland in Nairn, Moss of Inshoch, and Moray, Loch of Spynie, Elgin, Gordon Moss, Berwickshire. From the Lesser Bladderwort it differs in the larger flowers, which have a short conical spur, and a flat, rounded lower lip. The habit is also more robust.

ORDER LABIATÆ

Horse Mint (*Mentha hirsuta*, Huds. = *M. aquatica*, L.).—The habitat of this plant is river-sides, marshes, moist places. The habit is erect. The plant is usually softly hairy. The stems are 4-angled. The leaves are ovate to oblong or heart-shaped, the upper ones bract-like, not so long as the flowers, stalked, coarsely toothed, hairy both sides, opposite. The flowers are lilac, in axillary and terminal, dense, capitate spikes, which are ovoid, round, oblong, continuous or interrupted below. The ultimate flower-stalks and flowers are hairy. The bracts and bracteoles are awl-like to lance-shaped. The calyx-teeth are slender. The calyx is glandular, smooth, tubular. The plant is 1-5 ft. high, flowering in August and September, and is a herbaceous perennial.

Mentha alopecuroides, Hull = *M. velutina*, Bab.—The habitat of this plant is waste places. There are subterranean stolons. The leaves are very broad, more or less heart-shaped below, coarsely toothed, rather wrinkled above, very hairy below. The flowers are pink, in conical to cylindrical, short, stout spikes, with lance-shaped bracts, not so long as the flowers. The calyx-teeth are as long as the tube. The corolla is hairy. The plant is 2-3 ft. in height, and flowers in August and September. It is a herbaceous perennial.

Peppermint (*Mentha piperita*, Huds. = *M. aquatica* × *spicata*).—The habitat of this plant is damp places. The plant has the mint habit. There are underground stolons. The whole plant is devoid of hairs, and is more slender and smaller than Spearmint. The leaves are stalked, hairless, or hairy on the veins below, ovate to lance-shaped, oblong, acute, or blunt below, coarsely toothed, the upper leaves not so large. The flowers are lilac, in cylindric spikes, interrupted below, with close whorls, loose, short and blunt. The calyx is glandular, tubular, often red, smooth below, with awl-like, lance-shaped teeth. The plant has a purplish tint, and smells of peppermint. The plant is 1-2 ft. in height, flowering in August and September, and is a herbaceous perennial.

Whorled Watermint (*Mentha sativa*, L. = *x verticillata*, Huds. = *M. aquatica* × *rubra*).—The habitat of this plant is wet places, waste places, marshes. The habit is as in Watermint. The plant is green. The leaves are nearly stalkless, hairy both sides, elliptical, ovate to lance-shaped, oblong, acutely coarsely toothed, the upper leaves smaller, longer than the flowers. The flowers are lilac, in an indeterminate inflorescence, with flowers in axillary, distant whorls, none at the top. The bracteoles are not so long as the flowers, long-pointed. The calyx-teeth are triangular, lance-shaped, not so long as the tube, acute, the calyx tubular or bell-shaped. The throat of the calyx is naked. The ultimate flower-stalks, calyx, and corolla are hairy. The plant is 1-3 ft. in height, flowering between July and September, and is a herbaceous perennial.

Red Mint (*Mentha rubra*, Sm.).—The habitat of this plant is watery places. The plant has been regarded as a variety or sub-species of the last, or as one parent if that be considered a hybrid. The stem and veins of the leaves are purple or red (hence *rubra*). The leaves are smooth or have a few distant hairs, and are stalked. The flowers are lilac. The ultimate flower-stalks, lower part of the calyx, and corolla are smooth, the calyx-teeth hairy. The plant is 2-5 ft. in height, and is in bloom between July and October, the plant being a herbaceous perennial.

Mentha gracilis, Sole.—This plant, found in Wiltshire, is regarded as a variety of *M. gentilis*, L., or as a form of *M. rubra*, Huds. It is more slender, with the leaves more or less devoid of stalks, and green. The stem is hairy below. The leaves are oblong to lance-shaped, smooth or with a few hairs, the flowers in separate whorls, the lower bracts short-stalked, 5-6 times as long as the distant whorls, smaller and narrower than the leaves. The bracteoles are equal to or exceed the flowers. The calyx is fringed with hairs. The ultimate flower-stalks and corolla are smooth.

Marsh Woundwort (*Stachys palustris*, L.).—The habitat of this plant is river-banks, moist places, fields. The habit is erect. The stem is 4-angled, hollow, stout, with fine, turned-back hairs, less coarse than in the common Woundwort. The stem-leaves are opposite, shortly-stalked or stalkless, ovate, oblong to lance-shaped, narrow,

linear, more or less heart-shaped below, scalloped to coarsely toothed. The lower leaves are short-stalked, the upper stalkless. The flowers are dull-purple, in whorls of 8-10, with lance-shaped, acute calyx-teeth, which are spinous, and minute bracts. The nutlets are shining, with small dots. The plant is 1-3 ft. in height, flowering from July to September, and is a herbaceous perennial.

Stachys ambigua, Sm.—This hybrid (between *S. sylvatica* and *S. palustris*) has been found in 64 vice-counties from the Shetlands to W. Cornwall, and in Ireland (17), and the Channel Islands. It is not uncommon. The habitat is cultivated ground. The leaves are shortly-stalked, narrower than in the last, ovate to lance-shaped, heart-shaped below, coarsely toothed. The leaf-stalks may be half as long as the leaves.

ORDER POLYGONACEÆ

Water-pepper (*Polygonum Hydropiper*, L.).—The habitat of this species is watery places. The habit is more or less erect, from a prostrate base. The stem is creeping, rooting below, much branched. The leaves are shortly-stalked, lance-shaped, elliptic, wavy, more or less acute, glandular below, fringed with hairs, with smooth ocreæ, which are short, swollen, fringed with hairs, or not. The flowers are greenish-pink, in curved, loose racemes, which are interrupted, slender and drooping above, rarely erect. The green and rose perianth has a few large glands. There are 6-8 stamens, 2 functionless. The 2-3 styles are nearly distinct or free. The fruit is large, flattened, plano-convex, or 3-angled, as long as the perianth, opaque, black, dotted, rough, ovate-acute. The plant is 1-3 ft. high, flowering in August and September, and is a herbaceous annual.

Polygonum mite, Schrank.—The habitat of this species is wet places. The habit is more or less erect, prostrate below. The stem roots at the base, and is branched and slender. The leaves are shortly-stalked, lance-shaped, wavy, elliptic, more or less acute, fringed with hairs, glandless, with loose, funnel-shaped ocreæ or stipules, strongly fringed with hairs. The flowers are greenish-pink, in slender, more or less erect, long, loose, solitary, interrupted spikes or racemes, thickened upwards, leafy below, with sepals or perianth white, with faint nerves, without glands. There are 5-6 stamens. The 2-3 styles are connected half-way up. The nuts are large, rough, shining, black, narrow, ovate-acute, plano-convex, or 3-angled, as long as the perianth. The plant is 1-2 ft. in height, flowering in August and September, and is a herbaceous annual.

Common Red Persicaria (*Polygonum Persicaria*, L.).—This is a weed of cultivation and waste ground, damp places, native in marshes and on river-banks. The habit is erect or ascending. The stems are branched, with swollen nodes. The leaves are flat, ovate, lance-shaped, spotted, more or less stalkless, acute, fringed with hairs, downy, dotted below, without glands. The stipules are loose, strongly fringed with hairs. The flowers

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are in dense racemes, or spikes, compact, ovate to oblong, cylindrical, terminal and axillary, the lateral stalkless. The perianth-segments are red or white, smooth (like the stalk), without glands as a rule. There are 5-8 stamens, 2-3 styles, united half-way. The outer anthers open inwards, the inner outwards. The fruit is plano-convex, or 3-angled, flattened, gibbous one side, hardly covered by the perianth-segments. The plant is 1-2 ft. high, flowering from July to October, and is a herbaceous annual.

Water Dock (*Rumex domesticus*, Hartm. = *aquaticus*).—The habitat of this plant is damp ground, mountain valleys, waste places, wet meadows and ditches, or spots liable to be flooded. The habit is erect, the stem very stout. The leaves are very large, the lower oblong, lance-shaped, heart-shaped, wavy. The flowers are in crowded, leafless whorls. The sepals bear no tubercles, are heart-shaped, enlarged, entire, membranous. The nut is elliptical. The plant is 1-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Great Water Dock (*Rumex Hydrolapathum*, Huds.).—The habitat of this plant is ditches and river-sides. The habit is erect. The stem is branched. The leaves are very large, sometimes a foot long, heart-shaped below, broadly ovate or oblong to lance-shaped, acute, tapered below into a stalk, with a flat, not winged, leaf-stalk, the margin having small scallops. The flowers are reddish-green in a nearly leafless panicle, which is very large, with crowded whorls. The inner perianth-segments are enlarged, ovate to triangular, more or less entire, or with small teeth, tubercled, acute or blunt. The fruiting segments are net-veined, with a blunt or wedge-shaped base. The fruit is pale-chestnut, elliptic. The plant is 3-6 ft. in height, flowering in July and August, and is a herbaceous perennial.

Rumex maximus, Schreb. = *R. Hydrolapathum* v. *latifolius*, Borrer.—The habitat of this species is ditches and river-sides. The plant has very long leaves, the radical leaves obliquely heart-shaped below, oblong, acute, the leaf-stalks flat or broadly channelled above, with raised edges. The flowers are in crowded whorls, with few or no leaves. The base of the inner fruiting perianth-segments is blunt or heart-shaped, and they are triangular, tubercled, toothed below. The plant is 2-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Bay-leaved Willow (*Salix pentandra*, L.).—The habitat of this plant is river-banks, wet places, especially in the north. The species has the willow habit. The plant is a shrub or tree, with brown bark. The leaves are elliptic, ovate, lance-shaped, with a long narrow point, glandular, coarsely-toothed, shining, sticky, pale below, netted below, and fragrant when bruised. The stipules are ovate to oblong, or wanting. The male catkins, at first erect, are later drooping, the stamens 5 (or 4-12). The female catkins are not so long. The scales are oblong, and fall. The capsule is smooth. There is a short style. The stigma

is bifid, oval, oblong, straight. The height is 6-8 ft., or as a tree 20 ft. The tree is in flower in May and June, and is a deciduous perennial tree.

Salix decipiens, Hoffm. = *S. fragilis* × *triandra*.—The habitat of this plant is as in the last. It has smaller leaves than in the case of *S. fragilis*, with orange or crimson polished twigs, a longer style, and the catkins are closer.

Violet Willow (*Salix daphnoides*, Vill. = *S. acutifolia*, Willd.).—This has been found at Great Ayton, North Yorkshire, by river-banks, and not considered indigenous. The Violet Willow is a small tree with violet twigs. The buds are large. The leaves are linear, lance-shaped, narrow to oblong, with a long point, with acute, coarse teeth, scalloped, shining above, bluish-green below. The stipules are lance-shaped, half-heart-shaped below, acute. The catkins are stout, stalkless (the male one short, thick, hairy), and appear before the leaves. Female catkins have not been observed. The anthers are yellow. The scales are black, pointed, acute, hairy. The capsule has a short stalk or is stalkless, and smooth, ovate to inversely conical. The stigma is linear to oblong. The tree is 10-12 ft. high, flowering in April and May, and is a deciduous perennial tree.

ORDER CERATOPHYLLACEÆ

Hornwort (*Ceratophyllum demersum*, L.).—The habitat of this plant is ponds and ditches. The stems are densely leafy. The leaves are in whorls, several times forked, dark-green, with distant coarse teeth. The segments are awl-like, spreading, those of the upper leaves broader, more rigid. The spines are wanting. Flowers are not often to be found, and are very small. The calyx segments are notched above. The fruit has a slender, curved, awl-like style, and is armed with spines, without wings. The plant is 1-3 ft. in height, and flowers in June and July, being a herbaceous perennial.

Ceratophyllum submersum, L.—The habitat of this plant is as in the last. From this it differs mainly in the fruit, which bears no spines, but cylindrical tubercles. The calyx-segments are all entire. The leaves are light-green. The leaf-segments are awl-like. When young the fruit is smooth. The plant flowers in June and July.

ORDER HYDROCHARIDACEÆ

Water Soldier (*Stratiotes aloides*, L.).—The habitat of this plant is ponds, ditches, fen-ditches, still water. The plant has the aquatic habit. The stems are stolons. The leaves are numerous, sword-like, tapering, triangular, spinous, fringed with hairs or coarsely toothed, spreading, rigid, brittle, deep-green, with many nerves. The flowers are white, borne on flattened flower-stalks, which are axillary, short, and stout. The flowers rise to the surface and flower. The fruit is green, bent down at right angles to the stalk, flagon-

shaped, 6-angled, with carpels that separate. The seeds are mucilaginous. The plant is 6-18 in. in height, flowering from June to August, and is a herbaceous perennial.

Canadian Waterweed or Water-Thyme (*Elodea canadensis*, Michx. = *Anacharis alsinastrum*, Bab.).—The habitat of this plant is ponds, ditches, canals, streams. The habit is aquatic. The plant is dark-green, but transparent. The stems are long, brittle, round, rooting at the nodes, branched. The leaves are in whorls of 3-4, numerous, stalkless, close, oval or oblong, linear or lance-shaped, blunt, with small, coarse teeth. The flowers are greenish-purple, floating, with a long, slender tube, 3-8 in., which is a bifid spathe, with a stalkless ovary below. Only the female flowers are known in this country, except at Edinburgh, where the male flower has been found. The sepals are broad, nearly equal, boat-shaped, tinged with green and pink externally, hooded, bent inwards. The petals are oblong, bent-back, flat, transparent. The stigma is long, round in section, notched. There are no anthers. The anther-stalks are at first curved outwards, erect, linear, blunt. The plant is 1-4 ft. in length or height, flowering from July to October, and is a herbaceous perennial.

ORDER JUNCACEÆ

Common Hard Rush (*Juncus glaucus*, Ehrh. = *J. inflexus*, L.).—The habitat of this plant is wet, stiff soils, wet places. The plant has the rush habit. The stem is coarsely, deeply furrowed, slender, rigid, bluish-green. The pith is interrupted. The sheaths are dark. The leaves, if present, are reduced. The panicle is much-branched, loose. The perianth-segments are narrow, linear, lance-shaped, awl-like, as long as the capsule. There are 6 stamens. The capsule is black, ovoid, elliptic to oblong, mucronate. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Thread Rush (*Juncus filiformis*, L.).—The habitat of this plant is lake margins, stony and gravelly margins of lakes. The plant has the rush habit. There is a creeping rootstock. The stems are slender, finely furrowed, wiry, pale-green. The pith is interrupted. There are no leaves. The panicle or cyme is small, stalkless, with few flowers, about the middle of the stem. The perianth-segments are longer than the capsule, lance-shaped, acute. There are 6 stamens, with anthers shorter than the anther-stalks. The capsule is blunt, top-shaped, with a short, abrupt point. The seeds are very small. The plant is 6-8 in. in height, flowering in July and August, and is a herbaceous perennial.

ORDER ERIOCALCAEÆ

Pipe-wort (*Eriocaulon septangulare*, With. = *E. articulatum*, Morong.).—The habitat of this plant is shallow lakes. The plant is tufted in habit. The rootstock is creeping, with cellular, white

roots of jointed fibres. The leaves are awl-like, flattened at the margin, green, translucent, septate, smooth. The flowers are unisexual, borne on a scape, twisted, with 6-8 furrows, longer than the leaves. The flowers are 4-cleft, hairy at the end, as well as the scales, in a compact scaly head. The fertile flowers are 4-partite. The parts are in twos, the outer segments being dark, bearded at the tip, the inner fringed with hairs with a black spot at the tip. The lateral flowers have the divisions keeled, flattened, blunt, fringed. Each flower has a scale, black and blunt, shorter and broader. The anthers are dark. The ovary is stalked. The capsule is 2-celled. The plant is 6 in. to 2 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER TYPHACEÆ

Sparganium neglectum, Beeby (= *S. erectum*, L.).—The habitat of this plant is wet places. It has been regarded as a variety of *S. ramosum*. The inflorescence is, however, less branched and spreading. The stem is branched above. The radical leaves are 3-angled below. The perianth-segments of the female flowers are narrow, 1-nerved, the tip enlarged. The stigma is linear to lance-shaped. The ripe fruit is oblong to inversely ovoid, with obscure angles narrowed gradually into a long tapering beak. The plant flowers from June to August, and is a herbaceous perennial.

Unbranched Bur Reed (*Sparganium simplex*, Huds.).—The habitat of this plant is ditches and streams, ponds, river-banks. The plant is erect in habit or ascending. The stem is simple. The leaves are 3-angled at the base, keeled, erect, long, floating, with flat sides. The heads are numerous, racemose. The male heads are several, yellow, stalkless. The female are stalked, especially below. The stigma is linear, awl-like. The fruit is a drupe, shortly-stalked, more or less spindle-shaped, elliptic, narrowed both ends. The beak is long. The seeds are smooth. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

True Floating Bur Reed (*Sparganium natans*, L. = *S. affine*, Schultz).—The habitat of this plant is lakes, ditches, pools. The habit is as in the last. The stem is simple, limp, rather thick, suberect in flower, leafy, floating above. The leaves are floating, flat at the base, not keeled, long, linear, limp, the base swollen, sheathing, concave, grass-green. The heads are racemose, numerous, distant, stalked, the lower fertile ones, the male heads numerous, stalkless. The stigma is tongue-shaped, linear to lance-shaped. The fruit is a drupe, stalked, oblong, not longer than the beak, which is long, awl-like, spindle-shaped. The plant is 1-3 ft. long, flowering in July and August, and is a herbaceous perennial.

Sparganium minimum, Fr.—The habitat of this plant is lakes and ditches. The stem is simple, limp, slender. The leaves are linear, floating, blunt, not swollen below, pale, long, transparent.

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The heads are few, racemose, or in spikes, distant. There is a solitary male head. The lower female heads are shortly-stalked. The stigma is short, oblong to lance-shaped. The fruit, a drupe, is stalkless, inversely ovoid, shortly-beaked. The plant flowers in July and August, and is a herbaceous perennial.

Narrow-leaved Reed Mace (*Typha angustifolia*, L.).—The habitat of this plant is ditches, ponds, stream-sides, lakes. The plant is erect in habit. The stem is slender. The leaves are linear, convex, channelled below, dark-green, narrow, longer than the inflorescence. The spikes are separated by $\frac{1}{2}$ - $\frac{2}{3}$ in., the males above, the female below, the female reddish-brown, interrupted, with bracts. The perianth-scales are enlarged towards the top. The style is longer than the bristles. The style is long and slender. The rachis is hairy. The fruits are stalked with silky hairs. The plant is 5-7 ft. in height, flowering in June and July, and is a herbaceous perennial.

ORDER LEMNACEÆ

Ivy-leaved Duckweed (*Lemna trisulca*, L.).—The habitat of this plant is ponds, still waters, and stagnant waters. The plant is stemless. The root is single. The frond is thin, transparent, and elliptic, in shape inversely ovate to lance-shaped, tailed at one end, serrate at the other, proliferous at right angles, narrowed below. The young hastate fronds are placed crosswise to the old ones. The plant is submerged, and produces autumn bulbules which persist through the winter. The style is short. The testa is rough. It flowers in June and July, and is a herbaceous annual.

Gibbous Duckweed (*Lemna gibba*, L.).—The habitat of this plant is stagnant water, still water, and ponds. The habit is floating. The fronds are flat, inversely ovate, or rounded, spongy and swollen below, opaque, pale-green. There is a solitary, blunt root. The young fronds are stalkless. The cells below are large, the epidermal cells having flexuous walls. There are 2 stamens. The fruit is a utricle, and bursts transversely. The plant is floating, flowering from June to September, and is a herbaceous annual.

Great Duckweed (*Lemna polyrhiza*, L.).—The habitat of this plant is ponds and ditches, in water. The fronds are $\frac{1}{2}$ in. long, round to inversely ovate, flattened, plano-convex, green above, purple below, 7-nerved, with numerous tracheæ. The epidermal cells have flexuous walls. The roots are numerous, clustered, acute. The spathe is z-lipped. There are 2 stamens. The plant does not flower in this country. The plant is floating and annual.

Wolffia arrhiza, Wimm. (= *W. michelii*, Schleid).—The habitat of this species is slow streams, ponds, near London. There are no roots. The fronds are the size of a grain of sand, very small, green, more or less round, flat above, loosely cellular below. The young frond soon separates from the old one, and is solitary at the base. The epidermal cells have straight walls. There are

offsets within the base of the old frond. The plant is floating, flowering in June and July, and is a herbaceous annual.

ORDER ALISMACEÆ

Alisma lanceolatum, With.—As described by Withering this species, regarded as a variety only of the common Water Plantain, has the leaves lance-shaped, narrowed below. The sepals are ovate, and the styles are as long as the ovary. The capsule is 3-angled. The leaves are nearly strap-shaped, with no distinct leaf-stalk. The habitat is ditches, shallow water.

Floating Water Plantain (*Elisma natans*, Buch.).—The habitat of this plant is lakes, and the plant is very rare. The stem is floating and rooting, slender, often very long, leafy, and gives rise to long-stalked, oblong, floating leaves, and 1-5 slender, erect, flowered, simple stalks, the upper sometimes in an umbel. The radical leaves are submerged, stalkless, membranous, linear, awl-like. The radical leaf-stalks are broadly awl-like. The root petioles are in small tufts. The floating leaves are elliptic, stalked, oblong, blunt. The flowers are white, with a yellow spot or claw, large. The carpels are finely furrowed, and beaked. The plant is partly floating. It flowers in July and August, and is a herbaceous perennial.

Star Fruit or Thrum Wort (*Damasonium Alisma*, Mill. = *D. stellatum*, Pers. = *Actinocarpus Damasonium*, Sm.).—The habitat of this plant is ponds and ditches, gravelly ditches, and pools. The leaves are numerous, radical, floating or submerged, long-stalked, heart-shaped below, elliptic, narrow to oblong, 5-veined, blunt. The leaf-stalk is stout. The scape is stout and bears 1-3 whorls of flowers, which are white, with petals that soon fall. The carpels are large, awl-like, flattened, opening longitudinally, star-shaped. The seeds are 2, stalked, one erect, the upper horizontal. The plant is 4-12 in. in height, flowering between May and July, and is a herbaceous perennial.

ORDER NAIADACEÆ

Broad-leaved Pondweed (*Potamogeton natans*, L.).—The habitat of this plant is lakes, pools, ponds, ditches, and slow streams. The plant has the pondweed habit. The stem is creeping below, simple, round in section. The leaves are leathery, elliptic. The floating leaves are alternate, ovate, elliptic to lance-shaped, long-stalked, the blade decurrent on the leaf-stalk, folded, the leaf-stalk jointed below the limb. The lower leaves are linear to lance-shaped, or awl-like. The stipules are long and narrow-pointed. The flowers, with parts in fours, are in a dense spike which rises above the water, on a stout stalk, with stalked, roundly rhomboidal sepals. The anther-cells are not parallel. The fruit is large, rounded, greenish, flattened, keeled on the back when dry, round when green. The plant is floating, flowering in June and July, and is a herbaceous perennial.

Potamogeton fluitans, Roth. = *P. natans* × *P. lucens*.—As a hybrid between the two species cited the characters lie between the two, the blade of the upper floating leaves gradually merging into the leaf-stalk. This species or hybrid has been found in 5 vice-counties: W. Sussex, Surrey, Cambridge, Northants, and Hunts. It is also found in Ireland. It is very rare, and the habitat is canals. The plant is floating, and flowers in June and July, and is a herbaceous perennial.

Plantain-leaved Pondweed (*Potamogeton plantagineus*, Du Croz = *P. coloratus*, Hornem.).—The habitat of this plant is stagnant, peaty water, ditches, fens. The stem is creeping below, branched, with long runners from the axils. The leaves are all shortly-stalked, membranous, transparent, netted, blunt, the upper leaves opposite, nearly stalkless, elliptic, or rounded, the lower oblong, heart-shaped below. The stipules are short, broad, and blunt. The leaf-stalk is planocconvex above. The flowers are in long, cylindrical, dense spikes, on very slender equal stalks. The sepals are ovate. The anther-cells are nearly parallel. The fruit is green, very small, rounded on the back when fresh, keeled when dry, with an obsolete beak. The plant is floating, and flowers between June and September, being a herbaceous perennial.

Red Pondweed (*Potamogeton rufescens*, Schrad. = *P. alpinus*, Balbis).—The habitat of this plant is ditches, slow streams, ponds, canals. The stem is simple, round in section. The leaves are entire, leathery, short-stalked or stalkless, translucent, the lower submerged leaves stalkless, tinged with red, many-nerved, lance-shaped, narrowed both ends, netted, the upper leaves floating or erect, broader, leathery, inversely ovate, blunt, narrowed into a short leaf-stalk. The stipules are large, blunt, not winged. The flower-stalk is equal. The sepals are transversely oval. The spike is stout. The drupelets are ovate, with a long point, red, convex ventrally, semicircular dorsally, keeled. The plant is 1-4 ft. long, flowering between July and September, and is a herbaceous perennial.

Various-leaved Pondweed (*Potamogeton heterophyllus*, Schreb. = *P. gramineus*, L.).—The habitat of this plant is ponds, ditches, pools, and lakes. The stem is much-branched below, slender, round in section, green or red. The leaves are not clasping, nearly flat. The submerged leaves are limp, stalkless, lance-shaped, narrow both ends, wavy, with small teeth, and a small blunt point. The floating leaves are more or less leathery, elliptic or oblong, stalked, or absent. The stipules are broadly lance-shaped, blunt, with 2 stout prominent ribs. The lower are linear to lance-shaped, and without the ribs, equally veined, the upper opposite, widely spreading. The flower-stalk is thickened upwards. The fruit is blunt dorsally, and, when dry, 3-ribbed, small, with a short beak. The plant is 2-4 ft. in height, flowering in June and July, and is a herbaceous perennial.

Potamogeton falcatus, Fryer = *P. gramineus* × *P. nitens*.—The habitat of this plant is fen ditches.

The stem is branched from near the base. The submerged leaves are stalkless, elliptic, strap-shaped, not symmetrical, rounded at the base, the upper leaves clasping the stems, the margin entire, wavy, the floating leaves stalked, elliptic, with a short, blunt point, leathery. The stipules are herbaceous, persistent, the upper broad. The fruit is small, ovoid, rhomboidal, with an acute keel, and distinct lateral ridges. The flower-stalk is thicker than the stem, hardly swollen upwards, shorter than the leaves. The plant is floating. It flowers in June and July, and is a herbaceous perennial.

Potamogeton lanceolatus, Sm.—The habitat of this plant is rivers, shallow streams, and fen ditches. The stem is very slender, with few branches, fragile. The submerged leaves are stalkless, straight, linear, or oblong to lance-shaped, entire, acute, not blunt-pointed, with a chain-like network near the midrib. The floating leaves are more or less leathery, elliptic to lance-shaped, shortly-stalked. The stipules are awl-like, the uppermost broader with 2 dorsal raised ribs. The leaves are dark-green, blunt, netted, or with chain-like veins all over. The flowers are in a very short, ovoid spike. The flower-stalks are short, not thickened upwards, slender, equal, from the upper floating leaves, which are opposite. The drupelets are rounded, 3-toothed ventrally, nearly straight dorsally, with a ventral beak. The flowers bloom between July and September, and the plant is a herbaceous perennial.

Potamogeton nitens, Weber = ? *F. graminifolius* × *P. perfoliatus*.—The habitat of this plant is pools and lakes. The plant is much-branched below, the stem somewhat wavy. The submerged leaves are alternate, lance-shaped, rounded below, half-clasping, wavy at the border, transparent, bent-back, shining. The floating leaves are leathery, elliptic, stalked. The upper leaves are not always leathery. The stipules are equally veined, the upper ones large, persistent, nearly half as long as the flower-stalk. The flower-stalk is swollen upwards. The fruit is keeled when dry, with 3 ridges on the back. The spike is short. The plant is in flower in July and August, and is a herbaceous perennial.

Potamogeton lonchites, Tuckerm. (= *F. salicifolius* = *P. graminifolius*, Fr.).—The habitat of this species is rivers. The stem is stout with few branches, long. The submerged leaves are straight, narrowly strap-shaped, stalkless, narrowed both ends, entire, with a few parallel veins next the midrib, 7-9-ribbed, alternate, very long, translucent. The floating leaves, when present, are more or less leathery, oblong to lance-shaped, elliptic, long-stalked, opposite. The stipules are long, blunt, not winged. The flowers are in a short spike. The flower-stalk is thickened upward, long. The fruit is obovoid, or obliquely inversely ovate, 3-keeled, with a short beak. The plant is floating, flowering from June to September, and is a herbaceous perennial.

Shining Pondweed (*Potamogeton lucens*, L.).—The habitat of this pondweed is ponds, lakes,

rivers, and streams, and the plant is common in deep water. The plant has the pondweed habit. The stem is stout and long. The plant is shining and glistening. The leaves are large, more or less stalkless, translucent, transparent. They are mainly submerged, oval, oblong, or lance-shaped, linear, blunt-pointed, wavy, with small serrations, many-nerved. The upper leaves are leathery, opposite, floating. The stipules are winged or keeled on the back, large, and long. The flowers are in a stout, cylindrical, dense spike. The flower-stalks vary in length, are swollen upwards, and are as long as the spikes. The fruit is rounded on the back, keeled when fresh, the drupelets being small and turgid, with a short, blunt beak. The plant is 3-6 ft. long, flowering from June to September, and is a herbaceous perennial.

Potamogeton decipiens, Nolte.—The habitat of this plant is streams and canals, and the plant is very rare. The stem is long, much-branched. The leaves are membranous, transparent, stalkless, more or less rounded, or oblong to lance-shaped, not hooded, blunt, blunt-pointed, more or less entire, wavy at the end, the uppermost more or less stalkless. The stipules are short, not, or scarcely, winged. The flowers are in a dense spike 1-2 in. long. The flower-stalks are equal, stout. The fruit is as in the last but smaller. The plant is in flower in July, and is a herbaceous perennial.

Potamogeton griffithii, A. Benn. (= *P. alpinus* × *P. praelongus*).—The stem of this plant is branched, round in section. The submerged leaves are more or less clasping, strap-shaped, wavy, hooded, membranous, with a concave tip, 11-nerved, with 4-5 fainter nerves near the midrib. The upper leaves are long-stalked, inversely lance-shaped, tapered into the leaf-stalk, and are 13-17-nerved, blunt, more or less leathery. The stipules are long, narrow, blunt. The flowers are in a dense spike. The flower-stalks are slender, not so long as the upper leaves. The young fruit is ovoid, the beak terminal from the ventral face. The plant is in flower in July and August, and is a herbaceous perennial.

Potamogeton zizii, Roth (= *P. angustifolius*, Presl).—The habitat of this plant is lakes and rivers. The stem is long, much-branched. The leaves are nearly all submerged, membranous, transparent, narrow to lance-shaped, oblong, blunt-pointed, wedge-shaped, narrowed below, wavy near the end, with small teeth bent back. The floating leaves are inversely ovate-oblong, more or less leathery. The stipules are long, broad, with a broad, double keel. Sometimes there are aerial leaves, short-stalked, leathery, oblong, acute both ends. The flowers are in a short spike. The stipules are very long, straight, swollen upwards, thicker than the stem, longer than the leaves, terminal. The drupelets are rounded, with 3 keels. The plant flowers in July and August, and is a herbaceous perennial.

Long-stalked Pondweed (*Potamogeton praelongus*, Wulf.).—The habitat of this pondweed is

lakes and deep rivers, ditches chiefly in the East. The stem is round in section, greenish-white, robust, growing in deep water. The leaves are transparent, half-clasping, linear to oblong, blunt, hooded at the end, entire, with a swollen midrib, with parallel veins, the upper leaves opposite. The veins are numerous and close. The stipules are not winged, blunt, large. The flowers are in a dense spike. The flower-stalks are not thickened upwards, stout, equal, very long. The fruit is strongly acutely keeled on the back when fresh, or winged when dry. The plant flowers from May to July, and is a herbaceous perennial.

Potamogeton salicifolius, A. Benn. (= *P. lithuanicus*, Gorski).—The habitat of this species is rivers. The plant is not much branched. The stem is slender, round in section. The leaves are translucent, submerged, half-clasping, lance-shaped, acute or more or less so, entire, 3-nerved, with numerous secondary nerves. The stipules are blunt. The flowers are in a short spike. The flower-stalks are not enlarged upwards. The drupelets, when dry, are flattened, rounded, blunt. The British plant does not fruit. It flowers in July, and is a herbaceous perennial.

Perfoliate Pondweed (*Potamogeton perfoliatus*, L.).—The habitat of this species is ponds, lakes, rivers, and streams. The stem is stout, round in section, slightly branched, regularly forked above. The leaves are transparent, heart-shaped to ovate or lance-shaped, clasping, not hooded, the tip flat, blunt, or more or less acute, entire, 5-9-nerved. The upper leaves are opposite, translucent. The stipules are small, more or less acute, not persistent. The flowers are in a dense spike. The flower-stalks are thick, equal, terminal, and in the forks short, stout, not thickened upwards. The perianth-segments have a long claw. The fruit is rounded on the back when fresh, keeled when dry. The plant is in flower between June and September, and is a herbaceous perennial.

Curled Pondweed (*Potamogeton crispus*, L.).—The habitat of this species is ponds, ditches, streams, &c. The stem is flattened, slender, repeatedly forked. The leaves are in 2 rows, transparent, crisped at the margin, half-clasping, oblong, linear, blunt, stalkless, wavy, coarsely toothed, 3-nerved, close, spreading, bent-back. The stipules are small, blunt, and do not persist. The flowers are few, 6-8, in a loose small spike. The flower-stalks are curved, tapered upwards, stout or slender, equal, long. The fruit is keeled on the back when dry, with a long beak as long as the drupelets, which are obliquely ovoid, flattened. The plant is in flower in July and August, being a herbaceous perennial.

Dense Opposite-leaved Pondweed (*Potamogeton densus*, L.).—The habitat of this species is ponds, shallow streams, ditches. The stem is brittle, slender, repeatedly forked. The leaves are all submerged, opposite, the margins rolled in in bud. They are in 2 rows, elliptic, lance-shaped or ovate to heart-shaped, transparent, clasping, with a few teeth, 3-5 nerved, close, bent-back, acute, keeled, and the nodes of those

that are more or less opposite are confluent with an overlapping base. There are no stipules except on the upper leaves. The spike is loose, short, shortly-stalked, with few flowers, 3-6, bent-back ultimately. The flower-stalks are as long as the leaves, bent-back at length. The sepals are triangular. The drupelets are flattened, with a thin pericarp, more or less round, with a sharp keel, and a short beak which is bent-back. The plant flowers between July and September, and is a herbaceous perennial.

Sharp-leaved Pondweed (*Potamogeton zosterifolius*, Schum. = *P. compressus*, L.).—The habitat of this species is rivers, lakes, streams. The stem is flattened, winged, broad, with long internodes. The leaves are all submerged, alternate, linear, ligulate, with a narrow point, abrupt, with 3-5 primary and numerous, close, parallel, intermediate veins, half-clasping. The stipules are free, large, with a narrow point. The flowers are numerous in a cylindrical spike, 10-15. The sepals are transversely oval. The flower-stalks are longer than the spike. The drupelets are flattened, inversely ovate, 3-keeled, the inner edge rounded, with convex faces. The style is terminal, forming a beak in fruit. The plant flowers in July and August, and is a herbaceous perennial.

Potamogeton acutifolius, Link.—The habitat of this species is lakes and ditches, marsh or fen ditches. The stem is flattened. The leaves are all submerged, alternate, linear to ligulate, long-pointed, with 3 principal and many close parallel, slender, intermediate veins. The stipules are lance-shaped, acute. The flowers are in a very short spike, which is ovate, as long as the stalks. The sepals are rhomboidal. The stalk is very short. The drupelets are convex, the inner edge straight, with a tooth near the base, inversely ovate, flattened, keeled. The styles are hooked, and continue the inner edge of the fruit, being ventral, and bent-back. The plant flowers from June to August, and is a herbaceous perennial.

Potamogeton obtusifolius, Mert. & Koch (= *P. gramineus*, Sm.).—The habitat of this plant is pools, ditches, ponds, and it is a rare species. The stem is slender, flattened, with rounded edges, much-branched. The leaves are stalkless, lance-shaped, linear, more or less acute, or blunt, 3-nerved, dark-green, opaque, with no veins between the 3 main ones. The stipules are very blunt. The flowers are in a small ovoid spike, dense, continuous, as long as the stalk. The sepals are rhomboidal, shorter than the leaves, terminal or in forks. The drupelets are flattened, broadly obliquely ovoid, keeled. The plant flowers in July and August, and is a herbaceous perennial.

Potamogeton friesii, Rupr. (= *P. mucronatus*, Schrad.).—The habitat of this species is ditches, canals, &c. The stem is flattened. The leaves are grouped, linear, with an apiculus, 5-7-veined, the lateral veins close, and nearer the margin than the midrib, with no intermediate veins. The flowers are in an interrupted, short, loose spike, not so long as the flower-stalk. The latter is flattened, club-shaped. The sepals are trans-

versely oval. The fruit is obliquely ovate and bluntly keeled, with a short beak. The plant flowers in June and July, and is a herbaceous perennial.

Potamogeton rutilus, Wolff.—The habitat of this species is ditches. The stem is slender, flattened. The leaves are linear, the lowest blunt, the upper with long narrow points, with 1 pair of lateral veins running nearly to the apex. The stipules are long, with a long tapering point. The flower-stalks are two to three times as long as the rather dense spike. The fruit is oblong-elliptic, obscurely keeled, the inner edge nearly straight. The plant flowers in July, and is a herbaceous perennial.

Small Pondweed (*Potamogeton pusillus*, L.).—The habitat of this plant is rivers, ponds, and ditches. The stem is slender, not usually flattened, cylindrical, much-branched. The leaves are all submerged, half-clasping, narrow, linear, usually 3-veined (or 5-7), with no intermediate veins, more or less acute, the lateral veins half-way between the midrib and margin. The stipules are small, and acute. The spikes are short, loose, shorter than the stalk, with 6-10 flowers. The sepals are roundish to kidney-shaped. The stalks are hardly flattened, slender. The drupelets are small, obliquely ovoid, swollen, bluntly keeled, with a stout, more or less terminal beak. The plant flowers in July and August, and is a herbaceous perennial.

Potamogeton Kirkii, Syme (= *P. sparganifolius*, Bab.).—This species is found in streams and rivers and is very rare. The stem is very slender, with few branches. There may be no floating leaves, more or less leathery, lance-shaped, long-stalked. The submerged leaves are linear, narrowed at both ends, very long (2 ft.), stalkless, entire, without an apiculus, few and veined, with numerous parallel veins near the midrib. The leaves are longer than in *P. lanceolatus*, green when dry, and do not possess chain-like reticulations. The stipules are very long, blunt, not winged. The flower-stalks are slender, not club-shaped. The fruit is acutely keeled. The plant flowers in July and August, and is a herbaceous perennial.

Potamogeton sturrockii, A. Benn.—This has been regarded as a variety or sub-species of *P. pusillus*. The stem is slender, rather flattened. The leaves are thin, blunt, 3-5-nerved, bright-green, membranous. The flowers are in a short spike, with a slender stalk. The drupelets are small, with a short beak.

Hair-leaved Pondweed (*Potamogeton trichoides*, Cham. & Schl.).—The habitat of this species is muddy ponds and ditches. The stem is more or less round in section, hairlike (hence *trichoides*), thickened below the joints, and repeatedly branched, or forked and spreading, the branches tufted. The leaves are half-clasping, bristle-like, spreading, 1-veined, rigid, dark-green, with a fine point. The stipules are slender, acute. The flowers are in a short loose spike (3-6), curved, slender, on long, not thickened stalks, longer than the spikes, with large stipules. The sepals are rounded. The fruit is solitary, transversely kidney-

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shaped, obliquely ovoid, flattened, with an obscure keel, with a straight inner edge, with a tooth near the base, warty on the back, with a tubercle at the base when fresh, and with a short beak. The plant is in flower in July and August, and is a herbaceous perennial.

Fennel-leaved Pondweed (*Potamogeton pectinatus*, L. = *P. marinus*, Huds.).—The habitat of this plant is fresh and brackish ditches, streams, and ponds. The stem is slender, branched, densely branched, forming a thick flat mass. The root is a thick tuber. The leaves are long, linear, made up of 2 interrupted tubes, with a long narrow point, the upper leaves bristle-like, 1-3 ribbed, the lower flattened, 5-nerved. The stipules form a sheath with a free tip. The flowers are in an interrupted whorl, few, and distant. The stalks are long and slender, not thickened above. The fruit is large, swollen, broadly half-inversely ovate, the inner edge convex, rounded on the back, without ridges. The nut has 2 strong lateral ridges, and is not keeled, but has a short beak. The plant flowers in July and August, and is a herbaceous perennial.

Potamogeton vaginatus, Turcz.—This species is regarded as a variety of the last, found in Shetland.

Potamogeton flabellatus, Bab. (= *P. interruptus*, Kit.).—The habitat of this species is streams, ponds, and ditches, chiefly near the sea. The stem is, when floating, long, branched, wavy, fanlike (hence *flabellatus*). The rhizome is spreading from a tuber. The lower leaves are broadly linear, flat, with an abrupt apiculus, or long narrow point, 3-5-veined, the veins transverse, distant from the margin. The upper leaves are narrow, acute, 1-3-veined, the lateral veins marginal. The flowers are in interrupted spikes. The fruit is broadly half-inversely ovate, the inner edge more or less straight, the lateral ribs not well-marked, and not ribbed on the back when fresh, but rounded. There is a prominent keel on the nut. The plant flowers in July and August, and is a herbaceous perennial.

Fine-leaved Pondweed (*Potamogeton filiformis*, Nolte = *P. marinus*, L.).—This plant is found in lakes and ditches. The stem is slender (hence *filiformis*), branched below, simple above, with short branches. The leaves are like those of *P. pectinatus*, but longer. They are linear, bristle-like, 1-nerved, the veins transverse, channelled, alternate. The flowers are in a much-interrupted spike, in dense whorls, with very slender stalks, longer than the leaves. The drupelets are hardly keeled, inversely ovate, rough, rounded dorsally when dry. The nut is round on the back, with a very short, terminal beak. The plant flowers from July to September, and is a herbaceous perennial.

Horned Pondweed (*Zannichellia palustris*, L.).—The habitat of this plant is fresh and brackish waters, pools, ditches, ponds, and streams, stagnant water. The plant is floating or submerged, and has the pondweed habit. The stems are thread-like or bristle-like, with spreading branches. The leaves are opposite or in whorls, slender.

The flowers are without stalks, in the axils. The achenes are curved, with a smooth keel, stalkless. There are 1 or 2 stamens in the male flowers, which are long-stalked. The females consist of 1 free or shortly-stalked carpel, in groups of four or less, with a cup-like spathe, which may be entire. The plant flowers from May to August, and is a herbaceous annual.

Zannichellia polycarpa, Nolte.—The habitat of this species is brackish water. The leaves are opposite, thread-like. The anthers are 2-celled, the anther-stalks very short. The stigma is large and wavy on the margin. The style is very short. The achenes are 5-6, more or less stalkless. The nuts are close together, crenulate on the back. The plant flowers between May and August, and is a herbaceous annual.

Naias flexilis, Rostkov & Schmidt.—The habitat of this plant is deep lakes. The stem is branched, brittle, slender. The leaves are very slender, narrow, ternate, 3 in a whorl, or opposite, transparent, with very small distant teeth, or entire, veined. The sheaths are fringed with hairs, or have very small teeth. The flowers are solitary or 2-3. The anther is 1-locular. The style is short. The ovary is solitary, stalkless, in the axils. The plant is floating, flowering in August and September, and is a herbaceous perennial.

Naias marina, L. (= *N. major*, All.).—This is a very rare plant. The stems are repeatedly forked into 2 branches from near the base, with a few teeth. The leaves are opposite, or in whorls of 3, linear, with numerous, large, spinous teeth, the back and upper internodes also bearing spines, and with coarse teeth. The sheaths are round and more or less entire. The flowers are solitary. The male flower is enclosed in a spathe. The anther is 4-locular. The drupe is ellipsoid or ovoid, purplish, succulent, and narrowed above into a stout style which does not fall. The plant is 3-9 in. in height, flowering in July, and is a herbaceous perennial.

Naias graminea, Del.—This has been introduced into Britain in a canal at Reddish, Lancashire, in Egyptian cotton, from a mill which pours out waste hot water. The stem is branched throughout, with numerous, simple, lateral branches. The leaves are tufted, narrow, linear, with many small, spinous teeth. The sheaths are toothed and auricled. The male flowers are stalked, with 4-locular anthers. There are 2 stigmas. The fruit is either solitary or in groups of 2-4, and is narrowly ellipsoid. The plant is floating, flowering between July and September, and is a herbaceous annual.

ORDER CYPERACEÆ

Brown Cyperus (*Cyperus fuscus*, L.)—The habitat of this plant is ditches and wet meadows, shallow water. The plant has the sedge habit. The stems are numerous, 3-sided, from a fibrous root, which is tufted. The plant is nearly prostrate. The leaves are grass-like, spreading, flat.

The rays are few, short, simple as a rule. The bracts are 3, leaf-like, unequal, broad below, curved and spreading. The spikelets are crowded, slender, linear to lance-shaped, in small round heads or corymbs at the end of the branches. The glumes are numerous, spreading at length, fuscous, the midrib broad or narrow, with green keels oblong to ovate. There are 3 stigmas. The nut is small and white. The plant is 3-10 in., flowering in August and September, and is a herbaceous annual.

Needle Spike Rush (*Eleocharis acicularis*, Br.).—The habitat of this plant is the sandy edges of lakes and pools, wet places on heaths. The plant has the rush habit. The root is fibrous with slender runners, the rootstock being stoloniferous. The stems are bristle-like, slender, numerous, erect, and in water 1 ft. long, bluntly 4-angled, grooved. The sheaths are membranous, acute. The spikelets are very small, flattened, reddish-brown. There are 3 stigmas. The glumes are blunt, ovate, the broadest ones below. There are 1-3 bristles, which are short and deciduous. The nut is small, round above, inversely ovate to oblong, flattened longitudinally, 3-angled, ribbed and transversely furrowed, with the style top-shaped at the base. The plant is 2-8 in. high, flowering in June, July, and August, and is a herbaceous perennial or annual.

***Scirpus pungens*, Roth. (= *S. Rothii*, Hoppe = *S. americanus*, Pers.).**—The habitat of this plant is sandy banks, pond sides. The plant has the bulrush habit. The stems are acutely 3-sided, slender. There are 2-3 long, narrow, linear, channelled, keeled leaves. There are several sheaths. The spikelets are few, stalkless, lateral, large, blunt, ovate. The bracts are very long and slender. The glumes are notched, blunt-pointed, smooth, with 2 acute lobes, ovate, reddish-brown. The anther-tips are acute. There are 1-2 bristles. The nut is inversely ovoid, pale, plano-convex, smooth. The plant is 6-18 in. high, flowering in June and July, and is a herbaceous perennial.

Broad-leaved Water Sedge (*Carex acuta*, L. = *C. gracilis*, Curt.).—The habitat of this plant is wet places. The rootstock is tufted with or without stolons. The stems are 3-sided, rough at the top. The leaves are broad, long, as long as the stem, limp, the lowest sheaths sometimes leafless, with the edges not filamentous. The spikelets are numerous, inclined, long, long-stalked, the barren spikelets 2-3, stout or slender, the fertile 2-4, slender, cylindrical, distant, erect in fruit, with a few male flowers at the top, nodding in flower. The lowermost bract is leaflike, overtopping the stem, and with long auricles. The glumes are blunt, acute, purple, with a green midrib, narrow, lance-shaped. The fruit is oblong, lenticular, veined, pale, blunt or acute, round or oval, spherical or flattened, with 3-5 ribs and a smooth beak. The nut is plano-convex, round to inversely ovoid, with a short slender beak. The plant is 2-3 ft. high, flowering in May and June, and is a herbaceous perennial.

***Carex trinervis*, Degl.**—The habitat of this plant

is wet sandy places. The plant is stoloniferous. The rootstock is stout. The stem is 3-angled, tufted. The leaves are narrow, smooth, keeled. The sheaths are not fibrous. The spikelets are stout, close, erect. There are 2-4 males, 2-5 female, which are stalkless, oblong, cylindric, short and stout, male at the top, stalkless. The lower bract is slender, stiff, longer than the spikelet, and not sheathing, auricled. The fruit is ellipsoid, oblong, flattened, 3-5-veined, with a very short beak, brownish-green. The nut is longer than broad, narrowed into the beak, with a very short beak, lenticular, brown, dotted. The plant is 6-10 in. high, flowering in July and August, and is a herbaceous perennial.

Cyperus Sedge (*Carex Pseudocyperus*, L.).—The habitat of this sedge is banks of rivers, lakes, damp places, margins of stagnant pools, often in woods. The stem is stout, 3-sided, with rough angles. The plant is yellowish-green. The rootstock is tufted. The leaves are broad, flat, rough. The 3-6 fertile spikelets are cylindrical, spreading, dense-flowered, close, pale-green, drooping, long-stalked, thread-like, curved, the male spikelets solitary, slender, pale, sometimes with fertile flowers, all towards the top of the stem. The bracts overtop the stem, and are scarcely sheathing, leaflike. The glumes are yellowish-green, bristle-like, rough, swollen at the base, small, lance-shaped or awl-like. The awn is coarsely toothed. The fruit is spreading, ovoid to lance-shaped, oblong, narrow, ribbed, shining-green, with a long beak, which is deeply divided into 2, rigid, pungent. The nut is pale, 3-angled, elliptic. The style is persistent. The plant is 1-3 ft. high, flowering in June, and is a herbaceous perennial.

Lesser River Sedge (*Carex paludosa*, Good. = *C. acutiformis*, Ehrh.).—The habitat of this plant is river-banks and ditches, margins of streams, and wet places. It is a tall, stout plant, with a creeping rootstock, bearing stolons. The stems are 3-sided, rough on the angles, which are acute. The leaves are broad, bluish-green, erect, flat, the sheaths sometimes leafless, with filamentous edges. The male spikelets are stout, dark-brown, sometimes with fertile spikelets at the base, the glumes brown, blunt. The fertile spikelets are cylindric-al, blunt, shortly-stalked. The glumes of the female spikelets are blunt-pointed. The anthers are apiculate. There are 2-3 stigmas. The fruit is ovoid, ribbed, longer than the glumes, which are lance-shaped and awned, 3-angled, narrowed to the beak, with acute angles, the upper part granulate. The nut is lenticular or 3-sided. The beak is short, with 2 teeth. The plant is 2-3 ft. high, flowering between May and July, and is a herbaceous perennial.

Great River Sedge (*Carex riparia*, Curtis).—The habitat of this plant is river-banks, ditches, river margins, and wet places. The plant is tall, stout, with a creeping, tufted rootstock. The stem is 3-sided, rough on the angles. The leaves are broad, flat, bluish-green, with the edges of the sheaths filamentous. The male spikelets are stout, 3-6, close, dark-brown, acute, with fertile spike-

lets at the base, the glumes acute. The anthers are long-pointed. The fertile spikelets are 4–6, cylindrical, acute, stalked, inclined, long, and stout, sometimes compound at the base or male above. The glumes are ovate to oblong, narrow, with brown margins and green midrib, and rough tip. The male spikelets have slender glumes. The fruit is erect to spreading, dull-green, narrowed to the cloven beak, with numerous close ribs, oblong, ovoid, longer than the glumes, convex both sides. The nut is pear-shaped, triangular, elliptic, 3-sided, yellow. The plant is 3–5 ft. in height, flowering in May, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Ribbon Grass (*Phalaris arundinacea*, L.).—The habitat of this grass is rivers, lakes, watery places. The plant has the grass habit. The rootstock is creeping. The stems are stout, erect. The leaves are broad, flat, with smooth sheaths, and the ligule is large. The panicle is long, more or less erect, with rough, short, spreading branches when in flower. The spikelets are ovate, purplish, the flowers clustered. The glumes are not winged, but keeled. The empty glumes are 3-nerved, long-pointed, smooth. The flowering glumes are shorter, ovate to lance-shaped, without nerves, silky. There are 2 narrow silky scales. The plant is 2–6 ft. in height, flowering in July and August, and is a herbaceous perennial.

Marsh Foxtail (*Alopecurus geniculatus*, L.).—The habitat of this plant is wet meadows, ditches, wet grassy places. The plant has the grass habit. The root is fibrous. The stem is prostrate and rooting below, then ascending, bent at the node (hence *geniculatus*). The leaves are flat, roughish above and on the edges, elsewhere smooth. In dry places the knots are oval and fleshy. The upper sheath is swollen. The ligule is oblong. The panicle is slender, cylindrical, blunt, densely-flowered, with branches of 1 spikelet. The empty glumes are hairy and silky, the keel fringed with hairs, blunt, united below, membranous at the top. The awn is longer than the palea. The anthers are purplish, then yellow, linear. The styles are combined. The plant is 8–18 in. in height, flowering between May and September, and is a herbaceous perennial.

***Alopecurus fulvus*, Sm. (= *A. aequalis*, Sobol.).**—This species is regarded as a sub-species or variety of the Marsh Foxtail. It has been found in 32 vice-counties in England, Wales, S.E. Yorkshire, Norfolk to Sussex, and Devon. It is of the English type, found between coast-level and 600 ft. It is a native species found on the margins of ponds, reservoirs, &c. The plant has the grass habit. It is bluish-green. The stem is prostrate below, then ascending, often floating, bent at the nodes, smooth. The leaves are bluish-green. The ligule is oblong. The sheaths are rather swollen. The panicle is slender, more or less acute, cylindrical. The glumes are united below, blunt, fringed with hairs, the awn inserted near the middle, longer than the flowering glume. The

anthers are white at first, then orange. The plant is in flower from May to September, and is a herbaceous perennial. The plant is found on clay and loam in the rush society.

***Agrostis verticillata*, Vill.**—This species is found in the Channel Islands. It is similar to *Agrostis alba*, but the stem is bent at the base. The branches of the panicle have flowers at the base. It is in flower in May and June, and is a herbaceous perennial.

Tufted Hair Grass (*Deschampsia cespitosa*, Beauv.).—The habitat of this species is wet meadows, woods, thickets, rough pastures. The stems are stout, leafy, shining, and smooth. The plant is tufted. The leaves are linear, oblong, flat, rough, leathery, rolled in at the border, the sheaths shining, smooth or rough. The upper ones are very long. The ligule is blunt. The panicle is large, ovate, oblong, nodding, the branches rough, wavy, spreading in flower. The spikelets are purplish, flattened, shining, the florets overlapping. The glumes are rough at the keel, the empty glumes narrow, blunt, not so long as the flowering glumes (1–3), the third of which is imperfect, silky below. The awn is short, inserted below the middle, as long as the glume. The flower-stalk of the second floret is downy or hairy. The plant is 2–4 ft. high, flowering in July and August, and is a herbaceous perennial.

Water Grass or Whorl Grass (*Catabrosa aquatica*, Beauv.).—The habitat of this grass is watery places, ponds, ditches. The rootstock is stout, branched, creeping, and rooting. The plant is soft, bright-green, and limp. The stems are long, prostrate or floating, bent below, then erect, flattened smooth, finely furrowed, leafy, sometimes much-branched. The leaves are flat, linear-lance-shaped, blunt, the upper ones short. The panicle is long, pyramidal, with a stout, grooved rachis, with whorled branches, in alternate threes and fives, divided, slender, spreading. The spikelets are 2- or 3-flowered, more or less solitary, stalked, green and purple. The empty glumes are green, broad at the tip, the nerves obscure. The flowering glumes are purplish, smooth, with green nerves. The anthers are white. The plant is 6–12 in. high, flowering in May and June, and is a herbaceous perennial.

Manna Grass (*Glyceria aquatica*, Wahl.).—The habitat of this plant is watery places, marshes, stream-sides. The rootstock is stout, creeping. The stems are stout, smooth, finely furrowed, slightly flattened. The leaves are long, rough-edged, and rough on the keel, flat, acute, more or less erect. The sheaths are long and smooth, round in section. The ligule is short. The panicle is large, erect, much-branched, the branches rough. The spikelets are oblong, blunt, yellowish-green and purple, 5–10-flowered. The glumes are rough. The flowering glumes are blunt, rigid, 5–9, entire. The empty glumes are short, shining. The plant is 2–6 ft. high, flowering in July and August, and is a herbaceous perennial.

Floate Grass (*Glyceria fluitans*, Br.).—The habitat of this plant is watery places. The rootstock

is stout, creeping. The stem is stout, branched, round in section, floating or creeping, ascending, smooth, rooting below. The leaves are pale-green, acute, short, the upper long and floating. The sheaths are long, flattened. The ligule is broad, acute. The panicle is simple or branched, one-sided, long, the branches ascending, rough, simple, the lower paired. The spikelets are green, appressed, erect, linear, 7-12-flowered, the flowers lance-shaped, oblong, acute. The empty glumes are unequal, with torn tips, the flowering glumes are rough, with ragged tips. The anthers are five times as long as broad. The plant is 1-4 ft. high, flowering in July and August, and is a herbaceous perennial.

Glyceria plicata, Fr.—The habitat of this plant is similar to that of the last, stagnant water and wet places. It has been regarded as a variety of the last, from which it differs in the spreading fruiting spikelets. The stem is ascending, rooting below. The leaves are bluish-green, blunt, plaited when young. The ligule is short. The sheaths are rough and furrowed. The panicle is much branched, compound, with simple rough branches, the lowermost in fives, smooth, erect in flower, spreading in fruit. The spikelets are linear, 7-20-flowered, the florets oval-oblong, acute. The flowering glumes are twice as long as broad. The lower palea is blunt, 3-lobed. The anthers are three times as long as broad, cream-coloured, brown when empty. The plant is in flower between June and August, and is a herbaceous perennial.

Poa palustris, L. (= *P. serotina*, Ehrh.)—The habitat of this plant is marshy places, and the plant is very rare. The stem is tufted, smooth, ascending. The leaves are narrow, pointed, roughish. The root is fibrous or creeping, with short stolons. The sheaths are smooth. The

ligule is oblong and acute. The panicle is large, with rough, ascending to spreading branches, the lower more or less whorled in fives. The spikelets are ovate, acute. The flowers are 2-5, webbed. The lower palea is obscurely 5-veined, hairy on the keel and margins towards the base. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous perennial.

Greater Fescue Grass or Meadow Fescue (*Festuca elatior*, L.).—The habitat of this plant is meadows, river-banks, and wet places. The root-stock is creeping, stoloniferous. The stems are nodding, smooth. The leaves are broad, smooth, finely-furrowed, limp. The ligule is smooth. The panicle is more or less secund, branched, nodding, with 2 branches at each node, unequal, contracted after flowering, the flowers ascending at length, with a 3-sided rachis, smooth. The branches are rough, 2-nate. The spikelets are numerous, linear to oblong, green and dull purple. The empty glumes have a broad membranous border. The flowering glumes are rough above, seldom awned, 3-7, smooth, acute. The ovary is smooth. The plant is 2-6 ft. high, flowering in June and July, and is a herbaceous perennial.

Meadow Fescue Grass (*Festuca pratensis*, Huds.).—The habitat of this species is river-banks, wet places, wet meadows. The plant is smaller than the last, and not so stoloniferous. The panicle is close, not spreading, more or less secund, nodding, with linear-oblong spikelets of 5-10 flowers, in 2 rows, simple, with short branches in pairs, one with 1 spikelet, the other with 2 or more. The flowering glumes are more numerous, shortly awned, 4-10, smooth, blunt, or with a short point. The ovary is smooth. The plant is 1-2 ft. in height, flowering in June and July, and is a herbaceous perennial.

FLOWERS OF WASTE PLACES, ETC.

[The number of truly native plants is not as great as that of the aliens, casuals, colonists, denizens, &c., that have found a place in the British Flora. Natives of other countries have become established, or have existed for a longer or shorter time in the British Isles, and in the same manner British plants have found their way into other countries where at one time they were unknown. The exact status of many plants is uncertain, and there are some species that may be truly native. There are nearly two thousand alien plants that have been recorded from the British Isles by Mr. G. C. Druce. Hardly a tithe of these can be enumerated and briefly described here, as the others are of very uncertain occurrence. By reference to Mr. Druce's valuable list, however, those who wish to know the extent of the alien flora can ascertain the species that have been found. Mr. Dunn's alien flora gives some particulars also as to a large number. A new alien flora by Mr. Druce will constitute a comprehensive guide to these plants.]

ORDER RANUNCULACEÆ

Hairy Crowfoot (*Ranunculus hirsutus*, Curt.).—The habitat of this plant is roadsides in places where water lies stagnant, wet meadows, cultivated fields, waste land, and cornfields. The plant is erect, with more or less the rosette habit. The root is fibrous. The stem is erect, many-flowered. The radical leaves have 3 stalked, cut segments divided into 3 lobes nearly to the base, the upper with narrow, acute segments. The flowers are pale yellow, the sepals turned back, hairy, the petals with a scale over the gland. The receptacle is hairy. The flower-stalks are furrowed, with spreading or turned-back hairs. The achenes are tubercled along the border, broad, flattened, round, with a short, curved beak. The plant is 6–15 in. high, flowering from June to October, and is a herbaceous annual.

ORDER CRUCIFERÆ

Barbarea intermedia, Bor.—The habitat of this plant is cultivated fields and other similar ground. The plant has the rosette habit. It is intermediate between *B. stricta* and *B. præcox*. The stem is tall, with 2 or 3 angles. The lower leaves are lyrate, the upper pair of lobes equalling the breadth of the heart-shaped or egg-shaped terminal lobe. The upper leaves are divided nearly to the base, with many lobes. The flowers are in a dense raceme. The petals are longer by twice than the sepals. The pods are erect, with a short, conical point, thick, short, angular, 4–6 times as long as the pedicels. The seeds are nearly as long as broad. The plant is 9–18 in. long, flowering from May to August, and is a herbaceous biennial.

Wall Rocket (*Diplotaxis tenuifolia*, D.C.)—The habitat of this plant is waste places, walls. The rootstock is woody. The plant is bushy. The stem is branched, leafy, smooth or hairy, bluish-green, fetid. The leaves are more or less

smooth, bluish-green, linear to lance-shaped, acute, wavy, toothed, or deeply divided nearly to the base, the lobes narrow, unequal, linear, with distant teeth. The flowers are large, yellow, with inversely ovate, blunt, long-pointed petals, with a short claw. The pods are narrowed both ends, linear, distant, more or less erect, on long stalks, the valves flat. The style is stout, straight, and cylindrical. The seeds are in 2 rows. The plant is 1–2 ft. high, flowering between June and September, and is a herbaceous perennial.

Alyssum calycinum, L. (= *A. alyssoides*, L.).—The habitat of this plant is cultivated fields in the east counties on ploughed land, grassy commons in the south counties. The plant is herbaceous. The habit is prostrate, then ascending. The stem is branched below, stellately hoary or downy, rigid, ascending. The leaves are inversely ovate, oblong, lance-shaped, spoon-shaped, narrow below, few, scattered, blunt. The flowers are white or pale-yellow, then white, small, in racemes, lengthening in fruit. The sepals do not fall. The anther-stalks have no teeth. The shorter ones arise from between two bristle-like processes. The pods are numerous, downy, round, borne on short, stiff, spreading stalks, and are swollen, the margins broad, thin, and flat, notched above. There is a short style. The seeds are narrowly winged, there being 1–2 in each cell. The plant is 3–8 in. high, flowering from June to August, and is a herbaceous annual.

Alyssum maritimum, Lam.—The habitat of this plant is waste places near the sea. The habit is prostrate, then ascending. The plant is downy, with appressed hairs, 2-partite. The stem is woody below, stiff, leafy. The leaves are linear to lance-shaped, acute. The flowers are white, small, sweet-smelling, the calyx falling, the petals inversely ovate. The anther-stalks are all simple. The style is slender. The pods are oval, inversely ovate, round, pointed, smooth, not bordered, on slender stalks, spreading. The valves are con-

vex, 1-nerved, the cells 1-seeded. The seeds are winged. The plant is 4-12 in. high, flowering from June to September, and is a herbaceous perennial.

Wart Cress (*Senebiera didyma*, Pers. = *S. pinnatifida*, D.C.).—The habitat of this plant is waste places, as a rule near the sea. The habit is spreading. The stem is prostrate, creeping, slightly hairy, branched, leafy. The leaves are deeply divided to the base, once or twice, with small segments, inversely ovate, spreading. The flowers are in long, slender, loose racemes, with a leaf opposite, small, white, with one on the internode below, very often apetalous, or the petals may be very short, and with 2 stamens. The style is very small. The pods or silicles are kidney-shaped, notched, the 2 lobes (hence *didyma*) wrinkled, on slender, spreading stalks, the seed kidney-shaped, dotted, finely-furrowed. The plant is 6 in. to 1 ft. in height, flowering between June and September, and is a herbaceous annual or biennial.

Swine's Cress (*Senebiera Coronopus*, Poir. = *Coronopus verrucarius*, M. & T. = *C. ruellii*).—The habitat of this plant is waste ground. The habit is prostrate. The stems are much-branched, smooth. The leaves are larger than in the last, less divided nearly to the base. The flowers are small, white, in dense racemes, opposite the leaves. The petals are perfect. The pods or silicles are undivided, kidney-shaped, on slender stalks, wrinkled, crested with small sharp points. The style is prominent, awl-like. The stamens are perfect. The plant is 3-8 in. in height, flowering between June and September, and is a herbaceous annual or biennial.

Cress (*Lepidium sativum*, L.).—This plant is always cultivated in this country, sometimes escaping from, and then found as a casual near, gardens. The plant is erect, with the rosette habit. The stem is smooth, often bluish-green, the radical leaves 1-2 pinnate, lobed, the upper stalkless, linear, entire. The flowers are white. The pods are round to oval, blunt. The seeds are triangular, with the radicle in the narrow end, and with entire cotyledons, with no endosperm. The plant is 6-18 in. in height, flowering from June to August, and is a herbaceous annual.

ORDER RESEDACEÆ

Wild Mignonette (*Reseda alba*, L.).—This plant is found in gardens, and as an escape in corners where garden rubbish has been thrown out, near the seashore, and by roadsides, or generally in waste places. The habit is erect, being that of an undershrub below. The leaves are pinnate, divided, bluish-green, the segments entire, linear, acute, wavy. The flowers are white, with 6 sepals, which are linear to lance-shaped, divided, nearly equal, 3-fid, the sepals being of the same number, the stalks not so long as the latter. The fruit is oblong, wrinkled. There are 4 stigmas as a rule. The seeds are kidney-shaped, rough. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous biennial.

ORDER CARYOPHYLLACEÆ

Silene dubia, Herbich.—The habitat of this plant is shingle, rocky places, and the plant is local. The radical leaves are long-stalked, spoon-shaped, acute, the upper leaves less hairy, narrower. The flowers are white, the calyx narrower. It is a more slender plant than *S. nutans*, of which it has been regarded as a variety. The plant is 1-2 ft. in height, flowering in June and July, and is a herbaceous perennial.

Italian Catchfly (*Silene italicica*, Pers.).—Italian Catchfly is found as an escape along roadsides. The plant has the catchfly habit, being more or less a rosette plant. It is downy, more or less erect. The branches are 3-forked, sticky, opposite. The radical leaves are lance-shaped, spoon-shaped, the stem-leaves linear to lance-shaped. The panicle is nearly erect, the flowers white, the calyx club-shaped, with blunt teeth, the petals divided into two nearly to the base, not crowned, with broad segments. The carpophore is as long as the capsule. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Silene Armeria, L.—The habitat of this species is waste places. The plant is erect, bluish-green, sticky. The leaves are smooth. The panicle is many-flowered, forked, the flowers rose-colour, level-topped. The petals are notched, with a double, awl-shaped scale. The calyx is smooth. The capsule is club-shaped. The plant is 6-18 in. high, flowering from July to September, and is a herbaceous annual.

Cucubalus baccifer, L.—The habitat of this species is waste places. The stem is branched, spreading. The leaves are ovate, acute. The flowers are white. The calyx is bell-shaped, the petals distant. The fruit is fleshy. The plant is 1-2 ft. in height, flowering in June and July, and is a herbaceous perennial.

Common Chickweed (*Stellaria media*, Vill. = *Alsine media*, L.)—The habitat of this plant is gardens, fields, roadsides, cultivated and waste ground. The plant is prostrate, then ascending. The stem and branches have a hairy, alternate, lateral line, serving to convey water downward. The leaves are smooth, with broad leaf-stalks, fringed with hairs, ovate, short-pointed, the lower leaves stalked. The upper leaves are stalkless. The flowers are numerous, white, in cymes, axillary and terminal, the stalks longer than the calyx, the sepals ovate to lance-shaped, glandular, hairy, with a membranous border, smooth or with long hairs, the petals divided into 2 to the base. The fruit-stalks are wavy, bent-back, exceeding the leaves or not. The stamens are 3, 5, or 10. The seeds have round tubercles. The plant is 3-18 in. high, flowering from February to October, and is a herbaceous annual.

ORDER PORTULACEÆ

Claytonia perfoliata, Donn.—This plant has a tufted habit. The stems are ascending, smooth, fleshy, shiny, like the leaves. The radical leaves

BRITISH FLORA

are spoon-shaped, rhomboidal, the upper stem-leaves united below into a more or less rounded blade. The flowers are in a raceme, more or less whorled, white, with a few flowers at the base, small. The petals are nearly or quite entire, a little longer than the calyx. The capsule is round, 3-seeded. The seeds are black and round. The plant is 4-12 in. high, flowering from April to June, and is a herbaceous annual.

Claytonia alsinoides, Sims (= *C. sibirica*, L.).—The habitat of this plant is stream-sides, waste places, and the plant is local. The habit is as in the last. The radical leaves are ovate with a narrow point, the upper leaves are opposite, stalkless, rounded. The flowers are in a raceme, white or rose, and usually solitary, more numerous and larger than in the last. The petals are chiefly divided into two nearly to the base. The plant is 6-15 in. in height, flowering between May and August, and is a herbaceous annual or perennial.

ORDER MALVACEÆ

Lavatera sylvestris, Brot. (= *L. cretica*, L.).—This plant is found in waste places. The plant has an erect or ascending habit. The stem is herbaceous, hairy, rarely prostrate, and is like the Common Mallow, but possesses a 3-lobed epicalyx or involucle. The lower leaves are rounded to heart-shaped, the upper 5-lobed, blunt below, the lobes triangular, acute. The flower-stalks are axillary, shorter than the leaf-stalks, 1-flowered. The flowers are rose-purple. The fruit is smooth on a conical axis, with convex sides. The plant is 2-4 ft. high, flowering from June to August, and is a herbaceous perennial.

Round-leaved Mallow (*Malva rotundifolia*, L.).—The habitat of this plant is waste places. The plant is prostrate in habit, downy. The stems are numerous. The leaves are round (hence *rotundifolia*), kidney-shaped or heart-shaped, toothed, with 5-7 obscure lobes, scalloped, long-stalked. The stipules are ovate, acute. The flowers are lilac or pale-rose colour, in groups, axillary, the outer sepals linear to lance-shaped, shorter than the inner, which are stellately hairy, and ovate to narrow-pointed. The petals are 2 or 3 times as long as the calyx. The flower-stalks are bent-down. The fruit is downy. The carpels are downy, with smooth, rounded margins, the contiguous sides straight. The plant is 6-18 in. in height, flowering from June to September, and is a herbaceous perennial.

Malva verticillata, L.—This is an escape from gardens, and a weed of cultivation or of waste ground. It has very short flower-stalks. The inner sepals are ovate to acute, accrescent. The petals are little longer than the calyx. The carpels are smooth, without hairs, the edges square.

Small Mallow (*Malva pusilla*, Willd.=*M. borealis*, Wallm.).—The habitat of this plant is waste places. The stem is prostrate. The outer sepals are as long as the inner, which are smooth but fringed with hairs. The petals are scarcely longer than the calyx. The adjacent carpels meet with

a toothed edge, and are margined, netted, rugose, with short hairs. The axis of the fruit is half as long as in *M. rotundifolia*. The plant is 6-18 in. in height, flowering from June to September, and is a herbaceous annual.

Malva parviflora, L.—This is a weed of cultivation introduced with grain into this country. The plant has short flower-stalks, and broadly ovate to blunt-pointed, accrescent, inner sepals. The petals are little longer than the calyx. The carpels are hairy, transversely rugose, with distinctly winged edges.

ORDER LINACEÆ

Common Flax (*Linum usitatissimum*, L.).—Flax is an escape from flax fields, and found in waste places. The stem is branched above, forming a corymb. The rootstock is 1-stemmed. The leaves are linear, lance-shaped, alternate. The flowers are in broad cymes or corymbs, numerous, blue. The sepals are ovate, pointed, fringed with hairs, 3-veined. The petals are scalloped. The capsule is smooth within. The plant is 1-2 ft. high, flowering between July and September, and is a herbaceous annual.

ORDER GERANIACEÆ

Geranium striatum, L. (= *G. versicolor*, L.).—This is a colonist and a garden escape in shrubberies, or found on roadsides, &c., being rare. The stem is hairy, erect. The petals are white with purple veins, and the flower-stalks are 2-flowered. It resembles *G. nodosum*, L. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Musky Stork's Bill (*Erodium moschatum*, L'Her.).—The habitat of this plant is waste places. The habit is prostrate. The stem is stout, hairy, with spreading hairs. The leaves are pinnate, with ovate, coarsely unequally toothed, nearly stalkless segments, with deep, sharp, irregular teeth. The stipules are broadly ovate, blunt. The flowers are bluish-purple or pale rose, numerous on each stalk. The perfect stamens are toothed below, without hairs. The carpels are hairy, with a glandular depression and a concentric furrow below it. The beak is downy. The plant is 4 in. to 2 ft. high, flowering between June and August, and is a herbaceous annual.

ORDER OXALIDACEÆ

Oxalis stricta, L.—This is an alien found at Penzance and Ilsworthy, in gardens and waste places. The habit is like that of the last, but erect, with numerous runners, and nearly smooth. The leaves are imperfectly whorled. There are small stipules, or they may be absent. The flowers are yellow, in close terminal cymes, the flower-stalks bearing 2-8 flowers, longer than the leaves, the fruiting stalks spreading or erect. The capsules are smooth. The plant is 6-18 in.

in length, and flowers between June and September, being a herbaceous biennial or annual.

Yellow Oxalis (*Oxalis corniculata*, L.).—The habitat of this plant is waste, shady places and waysides. The habit is branched, prostrate. The stem is downy, without runners, slender. The stem-leaves in pairs are trifoliate, the leaflets inversely heart-shaped, the stipules oblong, parallel with the stem, united to the base of the stalk. The flowers are small, yellow, the flower-stalks in the axils 2-flowered, in a sort of umbel, not so long as the leaves, the fruit-stalks turned back. The capsules are downy, long, the seeds ribbed transversely. The plant is 6–18 in. in length, and flowers from June to September. It is a herbaceous annual.

Small Yellow Balsam (*Impatiens parviflora*, D.C.).—This species is found in waste places and woods. The plant is erect. The leaves are elliptic to ovate, toothed, with a long, narrow point, acute both ends. The flowers are small, pale yellow, on erect stalks, with 3–12 flowers. The spur is short and straight, formed by the posterior sepal. The plant is 1–2 ft. high, flowering from July to September, and is a herbaceous annual.

Indian Balsam (*Impatiens glandulifera*, Royle).—The habitat of this plant is riversides and waste places. The stem is stout. The flowers, which are rose-purple and pink, are large. The plant is 3–5 ft. high, flowering from July to October, and is a herbaceous annual.

ORDER LEGUMINOSÆ

Lupine (*Lupinus nootkatensis*, Donn).—The habitat of this plant is river shingle. The stem is stout, leafy. The leaves consist of 6–8 wedge-shaped, oblong, blunt-pointed leaflets. The leaf-stalks are as long as the leaflets. The stipules are linear to narrow-pointed. The flowers are blue, in a long, partly whorled raceme. The bracts are long, exceeding the buds. The upper lip of the calyx is divided into two nearly to the base, the lower is broad and 3-toothed. The corolla is blue or purple. The plant is more or less densely softly hairy, and very handsome. The plant is 1–2 ft. high, flowering in July and August, and is a herbaceous perennial.

Medicago lappacea, Desr.—The habitat of this plant is waste and cultivated ground, and the plant has been introduced. It is rare. It has been considered a variety of *M. denticulata*. The differences between it and the latter lie in the longer spines, which exceed the radius of the more or less rounded pod. The flowers are yellow, and are 1–4 on each stalk, in heads larger by twice than those of *M. denticulata*, with stronger spines and broader seeds. The pods are coiled 3–5 times, and have a thin edge. The spines are hooked, in 2 rows, spreading horizontally. The stipules are laciniate. The seeds are kidney-shaped. The plant flowers from May to August, and is a herbaceous annual.

Small Melilot (*Melilotus indica*, All.=*M. parviflora*, Desf.).—The habitat of this plant is waste

places. The plant is erect, slender, smaller than the other species. The leaflets are inversely ovate, coarsely toothed at the end. The stipules are awl-like, entire. The flowers are very small, pale yellow, the wings and keel equal, shorter than the standard. The calyx-teeth are triangular, the calyx reddish-brown. The pods are round to ovoid, blunt-pointed, netted, smooth, and olive-green. The plant is from 6 in. to 1 ft. in height, flowering from June to August, and is a herbaceous annual.

White Melilot (*Melilotus alba*, Desr.=*M. ieucaantha*, Koch).—The habitat of this plant is waste places, sandy and gravelly places, ballast heaps, railway banks, quarries, woods, plantations, corn-fields, clover fields, &c. The habit is erect. The plant is not so robust as the Common Melilot. The leaflets are inversely ovate, the upper oblong, coarsely toothed, blunt. The stipules are awl-like, entire. The flowers are white, in long racemes, small, the wings and keel equal, not so long as the standard. The pod is ovoid, acute, irregularly wrinkled, netted, smooth, blunt, black when ripe. The plant is 2–6 ft. high, flowering between June and August, and is a herbaceous biennial.

Melilot (*Melilotus arvensis*, Wallr.=*M. Petit-pierreana*, Hayne=*M. officinalis*, Desr.).—The habitat of this plant is waste places. This Melilot is not native. The plant is erect. The leaflets are inversely heart-shaped or oblong, coarsely toothed, the uppermost lance-shaped. The stipules are awl-like, entire. The flowers are pale-yellow or white, in long racemes, with the wing and standard equal and exceeding the keel. The pods are ovoid, blunt, ribbed, smooth, blunt-pointed, rounded, keeled on the back, transversely plaited, and olive-brown in colour when ripe. The plant is 1–3 ft. high, flowering from June to August, and is a herbaceous biennial.

Starry Trefoil (*Trifolium stellatum*, L.).—The habitat of this plant is shingle beaches and ballast heaps. The stem is short, prostrate, then ascending, spreading, softly hairy. The leaflets are inversely heart-shaped, softly hairy. The stipules are ovate, acute, with small teeth. The flowers are cream-coloured, small, in rounded heads, terminal, and stalked. The calyx is large in fruit, 10-veined, hairy, the teeth awl-like, from a broad base, spreading like a star (hence *stellatum*), longer than the corolla, which is spreading in fruit, 3-veined and netted, the throat closed with hairs. The plant is 4–12 in. high, flowering from June to August, and is a herbaceous annual.

Reversed Trefoil (*Trifolium resupinatum*, L.).—This is an introduced species found in waste places. The stem is prostrate or ascending. The leaflets are inversely ovate, minutely toothed. The stipules are awl-like to lance-shaped, from an ovate base. The flowers are in hemispherical heads, which become round at length, on axillary short stalks, small, reversed in position, cream or rose colour. The bracts are very small. The calyx is smooth or hairy above, in fruit is inflated, membranous, netted, woolly. The pod is included.

BRITISH FLORA

There are 2 seeds. The plant is 4-9 in. in height, flowering in July and August, and is a herbaceous annual.

Large Hop Trefoil (*Trifolium agrarium*, L.).—The habitat of this plant is woods, bushy places in S. Europe, and in England waste places, being a casual in sown grass and clover fields, roadsides and fields, where it is established here and there. The habit is erect. The leaflets are narrowly inversely ovate, the central petiolule not longer than the lateral. The stipules are oblong to lance-shaped, not enlarged below. The flowers are deep yellow, and turn brown, in oval, dense heads with 50 florets, the stalks axillary, as long as, or longer than, the leaves. The florets are at length turned back. The standard is enlarged, striate, larger than the pod. The style is nearly as long as the pod. The plant is 4-12 in. high, flowering from June to September, and is a herbaceous annual.

Hairy Vetch (*Lathyrus hirsutus*, L.).—The habitat of this plant is cultivated fields, ballast hills, or fields. The habit is climbing, the stems being winged, with one pair of linear-lance-shaped leaflets, the leaves not being so long as the flower-stalks. The flowers are purple, 2 on each flower-stalk. The standard is crimson. The pods are hairy, with bulbous hairs, or silky, the 8-10 seeds being covered with wart-like knobs. The plant is 2-4 ft. high, and flowers in June and July, being annual, herbaceous.

***Lathyrus sphericus*, Retz.**—The habitat of this plant where it is native is bushy places. The leaflets are linear to lance-shaped. The leaf-stalks have one pair of leaflets and a tendril. The flower-stalks bear 1 flower, with a long point not so long as the leaf-stalk. The seeds are rounded.

Everlasting Pea (*Lathyrus latifolius*, L.).—In England this species is an escape from gardens, found rarely in waste places. The habit is that of a climber. The stem is winged. The leaves are large, elliptic, bluish-green, with one pair of leaflets. The stipules are broad, protecting the leaflets. The flowers are purplish-rose. The hilum one-third encircles the seed. The plant is 3-6 ft. high, flowering from June to August, and is a herbaceous perennial.

ORDER ROSACEÆ

Hautboy Strawberry (*Fragaria elatior*, Ehrh. = *F. moschata*, Duchesne).—The habitat of this plant is woods and plantations. It is the origin of the Hautbois strawberry. The whole plant is larger and more hairy than *F. vesca*, from which it may be derived. The leaflets are short-stalked. The plant is imperfectly dioecious. The flowers are large, white, the petals entire, one-third broader than long. The claw is distinct, bright yellow. The calyx in fruit is spreading, and the hairs on the main and ultimate flower-stalks are spreading and rather bent down. The base of the receptacle has no achenes. The plant is 4-10 in. high, flowering from May to July, and is a herbaceous perennial.

Norwegian Potentilla (*Potentilla norvegica*, L.).

The habitat of this plant is wet sandy places, riversides, waste places, and it has been much cultivated. The habit is erect or prostrate. The stem is not much-branched above, stout, simple below. The plant is stiffly hairy. The leaves are palmately trifoliate, with a slender leaf-stalk. The leaflets are inversely lance-shaped or inversely ovate, coarsely toothed near the base. The flowers are yellow, in crowded, terminal cymes, the petals not so long as the calyx, inversely ovate. The achenes are rough. The plant is 6-12 in. high, flowering in July and August, and is a herbaceous annual or perennial.

Fodder Burnet (*Poterium muricatum*, Spach = *P. polygamum*, Waldst. & Kit.).—This plant is an alien or colonist, sown as a fodder crop in England, and found in waste places and cultivated ground. The stem is slightly angular. The flowerheads and purple florets are as in Salad Burnet. The calyx of the fruit is hardened, 4-winged, pitted, the pits raised, the edges with small, blunt teeth. The ridges are muricate. The plant is 6-18 in. high, flowering from June to August, and is a herbaceous perennial.

***Rosa pomifera*, Herrm.**—The habitat of this species is plantations, gardens, &c. The leaflets are large, oblong, lance-shaped, doubly-toothed, downy. The flowers are rose colour, the sepals copiously pinnate, the petals fringed with hairs. The fruit is round, with no disk, purplish-violet. The plant is 3-8 ft. high, flowering in June, and is a deciduous shrub.

ORDER CRASSULACEÆ

***Sedum micranthum*, Bast.**—The habitat of this species is walls and rocks. The leaves are flattened both sides, and are inversely ovate to oblong, blunt. The sepals are rounder, the petals more acute. The plant is 3-4 in. in height.

ORDER ONAGRACEÆ

Evening Primrose (*Oenothera biennis*, L.).—The habitat of this plant is in waste places. The plant is erect, downy or hairy. The stem is leafy. The leaves are ovate to lance-shaped, flat, with distant teeth. The leaf-stalk is short, with a stout, white midrib. The flowers are bright yellow, in a sort of spike, stalkless, large, numerous. The petals are inversely heart-shaped, and exceed the stamens, which are as long as the style. The calyx-lobes are longer than the ovary. The capsules are oblong, more or less cylindrical, or roundly 4-angled, and taper upwards. The plant is 2-3 ft. in height, flowering from July to September, and is a herbaceous biennial.

ORDER UMBELLIFERÆ

Field Eryngo (*Eryngium campestre*, L.).—The habitat of this plant is ballast hills, waste ground, and the plant is very rare. The plant is more bushy and slender, less glaucous, more branched than the common species. It is pale green in

colour. The radical leaves are pinnately 3-5-lobed, or divided nearly to the base, spinous, stalked, the stem-leaves clasping, twice pinnatifid. The leaf-stalks are thick, more or less round, channelled. The petals are purplish or white, the phyllaries lance-shaped, spinous, longer than the heads, the scales of the receptacle entire. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous biennial.

Alexanders (*Smyrnium Olusatrum*, L.).—The habitat of this plant is waste places near the sea, ruins; and near the sea (as in Norfolk) it is locally abundant. The stem is round, solid, furrowed, leafy, branched, forming a panicle above, with opposite branches. The stem-leaves are stalked, trifoliate, coarsely toothed. The radical leaves are large, 3-4-ternate. There are membranous sheaths, with hairy margins. The leaflets are ovate, shining, cut, coarsely toothed. The flowers are greenish-yellow, in lateral and terminal, rounded, dense umbels. The rays are few or many, long or short. The fruit is black or dark-brown, with ridges, aromatic. The plant is 3-4 ft. high, flowering from April to June, and is a herbaceous perennial.

Hare's Ear (*Bupleurum rotundifolium*, L.).—The habitat of this plant is chalky fields and cultivated ground and waste places. The habit is erect, the stems simple or branched above, hollow. The leaves are peltate or united around the stem, oval, acute, and the bract is oval, and united below. There is no general involure. The florets are yellow. The partial involure is converging. The fruit is not granulate, without vittæ, the ridges slender, with finely furrowed interstices. The plant is 8 in. to 1½ ft. in height, and flowers in June and July, being a herbaceous annual.

Sickle Hare's Ear (*Bupleurum falcatum*, L.).—This is an alien, and found in hedgerows by roadsides and in fields. The habit is similar to the last, the stem slender, hollow, erect, simple or branched, the leaves with parallel nerves lance-shaped, the lower elliptical, and on long stalks, the upper linear, half-clasping, and bent back. The florets are small, yellow. The five bracts are lance-shaped, linear, and as long as the florets. The fruit is narrow with prominent ridges, and not granulate. The plant is 1-4 ft. in height, flowering in August, and is perennial.

Caraway (*Carum Carvi*, L.).—The habitat of this plant is usually waste places. The habit is erect. The stem is branched, slender, finely furrowed, hollow. The root is spindle-shaped. The leaves are narrow, triangular, linear to oblong, bipinnate, the leaflets cut, linear, the pinnules opposite, the lobes narrow-pointed. The flowers are white, in irregular umbels, on slender stalks, with no partial involure, and the general involure may be reduced to 1 leaf, or absent. The carpels are aromatic, oblong, with short ridges. The styles are spreading. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Common Parsley (*Carum petroselinum*, Benth. &

Hook. = *Petroselinum sativum*, Hoffm. = *F. vulgare*, Lam.).—The habitat of this plant is garden rubbish, cliffs, rocks and old walls, banks, roadsides, waste places. The plant is erect in habit, hairless, shining. The stems are much-branched, round, finely-furrowed, solid. The leaves are greenish, shining, triangular, tripinnate, with many, more or less stalkless leaflets, those of the lower leaves ovate to wedge-shaped, divided into three nearly to the base, toothed, those of the upper leaves ternate, lance-shaped, entire. The flowers are white or yellow, in regular, flat-topped umbels. The partial involucle is slender. The rays are numerous. There are 2-3 bracts, often divided, and many bracteoles. The fruit is ovoid, green. The slender styles are bent back. The plant is 9-18 in. high, flowering from June to August, and is a herbaceous perennial.

Garden Chervil (*Anthriscus Cerefolium*, Hoffm. = *Cerefolium sativum*, Bess.).—The habitat of this plant is waste places, waysides, roadsides, rubbish-heaps. The habit is erect. The stem is hairy above the nodes only. The leaves are tri-pinnate, the leaflets are ovate, pinnatifid. The flowers are in stalkless, lateral umbels, with a leaf opposite. The fruit is very narrow, linear, smooth, twice as long as the beak. The plant is 1-1½ ft. high, flowering from May to July, and is a herbaceous annual.

Coriander (*Coriandrum sativum*, L.).—The habitat of this plant is waste places. The habit is erect. The stem is slender, leafy, hollow, round. The leaves are triangular, bipinnate, cut, the segments broad, round, wedge-shaped, ovate, scalloped, lobed, the upper leaves with more linear segments, fleshy, loose. The leaves are membranous. The flowers are white, small, very irregular, in an umbel, which is stalked, of 5-10 rays. The bracteoles are short, linear, acute. The carpels cohere. The styles are slender, wavy. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER CAPRIFOLIACEÆ

Dwarf Elder or Danewort (*Sambucus Ebulus*, L.).—The habitat of this species is waste places near villages, roadsides, field borders. It has the shrub habit, but is herbaceous. The rootstock is creeping. The stems are furrowed, numerous, ribbed, and grooved. The leaves are pinnate. The leaflets are oblong to lance-shaped, coarsely toothed. The stipules are leafy, coarsely toothed. The flowers are white, red outside, in terminal, compact cymes, with three main branches. The corolla is broadly bell-shaped. The anther-stalks are crumpled, the anthers purple. The fruit is a round berry, reddish-black. The plant is 2-3 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER VALERIANACEÆ

Centranthus Calcitrata, Dufr.—The habitat of this species is waste places as well as walls. The

radical leaves are ovate, entire. The stem-leaves are deeply divided nearly to the base. The flowers are white or purple, with a very short spur. The plant is 6-9 in. in height, and is an annual.

ORDER COMPOSITÆ

Michaelmas Daisy (*Aster salignus*, Willd.).—The habitat of this species is waste places, fens, and the plant is rare. The radical leaves are spoon-shaped, blunt, entire. The stem-leaves are stalkless, thin, lance-shaped, with a narrow point. The flowerheads are bluish-violet and yellow, the ray violet, the disk yellow. The plant is 2-3 ft. high, flowering from August to October, and is a herbaceous perennial.

Canadian Fleabane (*Erigeron canadensis*, L.).—The habitat of this plant is waste places. The habit is erect. The stem is leafy, branched above, hairy. The leaves are oblong, linear to lance-shaped, fringed with hairs, entire, or with a few teeth. The flowerheads are numerous, small, yellow, panicled or corymbose. The involucre is cylindrical, less than the ray florets, and at length spreading. The phyllaries are slender, green, with membranous border, smooth. The ray florets are slender, sometimes purplish, the disk pale yellow. The ligule is white, hardly longer than the pappus, which is white. The plant is 6 in. to 2 ft. high, flowering from July to September, and is a herbaceous annual.

Peruvian Galinsoga (*Galinsoga parviflora*, R. & P.).—The habitat of this plant is cultivated fields, roadsides, rough, marshy, stony ground. The habit is erect. The plant is more or less downy. The stem is slender. The branches are opposite. The leaves are short-stalked, ovate, bluntly toothed, fringed with hairs. The flowerheads are yellow in repeatedly forked cymes. The ray florets are few, 4-6, broadly ligulate, white, short. The disk florets are yellow, as long as the phyllaries. The flower-stalks are glandular, without bracts. The involucre is hemispherical. The phyllaries are unequal, oblong, fringed with hairs. The achenes are inversely ovoid, flattened, black. The pappus scales, 8-16, are narrowed to oblong. The plant is 6-24 in. in height, flowering from July to October, and is a herbaceous annual.

Inula britannica, L.—The habitat of this plant is waste places. The plant is prostrate below, then ascending, woody. The radical leaves are lance-shaped, clasping, with many soft hairs, which give them a dull appearance. The flower-heads, 1-2, are yellow, on long stalks. The achenes are hairy. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Yellow Camomile (*Anthemis tinctoria*, L.).—The habitat of this plant is railway banks, fields, ballast-heaps, waste places, and cultivated ground. The habit is erect. The stems are much-branched, cottony. The leaves are 2-pinnatifid, downy below, the segments parallel, decurrent, coarsely toothed. The flowerheads are bright yellow, without a ray sometimes, hemispherical, on long stalks, terminal

The scales do not project. The achenes are square in section, crowned with a membranous border, undivided. The plant is 6-24 in. high, flowering in July and August, and is a herbaceous perennial or biennial.

Rayless Camomile (*Matricaria suaveolens*, Buch = *M. discordea*, D.C.).—The habitat of this species is waste places. The plant is of low stature. The stem is densely leafy. The foliage is like that of *M. inodora*. The flowerheads are greenish-yellow, rayless, on short stalks. The phyllaries are broadly membranous. The plant is 4-12 in. high, flowering from June to August, and is a herbaceous annual.

Cotula coronopifolia, L.—The habitat of this plant is waste places. The leaves are succulent, lance-shaped, clasping, with acute lobes. The flowerheads are brilliant-yellow, button-shaped, without any ray florets, and small, solitary. The plant is 4-12 in. in height, flowering in July and August, and is a herbaceous perennial.

Winter Heliotrope (*Petasites fragrans*, Presl = *Nardosmia fragrans*).—The habitat of this plant is shrubberies and cliffs at Tenby, borders of plantations, and waste places. The leaves are heart-shaped, green, downy below. The flower-heads are yellow, the female florets shortly ligulate. The flowers have the odour of vanilla. The plant is 6-12 in. high, flowering from March to May, and is a herbaceous perennial.

Petasites albus, Gaertn.—The habitat of this plant is damp stony hollows, waste places, plantations. The leaves are not so large as in the last, heart-shaped, deeply scalloped, very white beneath. The flowerheads are white or cream colour. The plant is 6-12 in. high, flowering from March to May, and is a herbaceous perennial.

Clammy Groundsel (*Senecio viscosus*, L.).—The habitat of this plant is waste dry ground, shingle, sandhills. The plant is fetid, glandular, and clammy. The habit is erect. The stem is stout, much-branched, spreading, rigid, grooved, angled, wavy, the segments oblong, unequally toothed and lobed. The leaves are broad, more or less bipinnatifid. The flowerheads are yellow, in irregular corymbs, bell-shaped, on long stalks, and are few, erect, broad. The involucre is clammy, cylindrical. The ray florets are small, turned down. The outer phyllaries are few, green, half as long as the inner, and hairy. The achenes are hairless, slender, ribbed. The plant is 6-24 in. high, flowering from July to September, and is a herbaceous annual.

Senecio Cineraria, D.C.—This plant is found to hybridize with *S. Jacobaea* in Ireland. The stem is woody. The whole plant is white and tomentose. The leaves are densely white-felted below, and deeply divided nearly to the base. The segments are broader and lobed at the ends. The flowerheads are yellow, numerous. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

Arctium minus, Bernh.—The habitat of this plant is waste places and woods. The plant is smaller than *A. majus*. The central stems are

mainly nodding, and these and the branches have scattered small heads. The radical leaves are coarsely toothed, the leaf-stalks are hollow, slightly angular, nearly round, hardly furrowed. The flowerheads are purple, in racemes, short-stalked, more or less stalkless, cottony, globular, a little narrowed at the mouth in fruit, greenish, slightly webbed, not umbilicate. The phyllaries are not so long as the florets, awl-like, the inner row as long as the rest, gradually awl-like, the subcylindrical part of the floret as long as the lower part. The achenes are brown with black blotches. The plant is 2-3 ft. high, flowering in July and August, and is a herbaceous biennial.

Star-thistle (*Centaurea Calcitrata*, L.).—The habitat of this plant is dry waste places, gravelly and sandy places. The habit is erect. The plant is rigid. The stems are furrowed, cottony or smooth, with leafy branches, spreading, stout. The leaves are deeply divided nearly to the base, the lobes curved back, crista, distant, slender, those of the radical leaves lance-shaped, toothed, of the stem-leaves, linear. The flowerheads are rose-purple, lateral, stalkless, or at the end of leafy branches, solitary. The phyllaries are smooth, palmately spinose, the central spine strong, channelled, yellow, the inner ones with a membranous, blunt appendage, long-spreading, with a few smaller ones at the base. The achenes are white or mottled brown. There is no pappus. The plant is 6-24 in. high, flowering in July and August, and the plant is a biennial or annual.

Crepis setosa, Hall, f.—In the British Isles this species is a casual in clover fields. The plant is stiffly hairy. The habit is erect. The stem is branched from below, angled, furrowed, leafy. The leaves are runcinate, toothed, or lyrate to runcinate, deeply divided to the base. The stem-leaves are clasping, arrow-shaped, strap-shaped, entire or cut or toothed below, large. The buds are erect. The flowerheads are yellow, bell-shaped, on slender not thickened stalks, covered with stiff bristles at the top. The involucre is narrowed in fruit, the inner not so long as the pappus, linear, hardening. The phyllaries are prickly, rigid, slender, keeled, the outer awl-like, spreading. The phyllaries are covered with rigid, simple, stiff bristles. The achenes are slender, with long beaks. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous biennial.

Rough Hawksbeard (*Crepis biennis*, L.).—The habitat of this plant is dry pastures, and chalky places, waste places, and cultivated ground. The habit is erect. The plant is tall, with a stout, furrowed stem, roughly hairy. The radical leaves are divided nearly to the base, with the lobes bent backwards, and larger towards the extremity. The stem-leaves are stalkless, simple, lance-shaped. The flowers are yellow, the heads large, the outer phyllaries loose, with a white edge, oblong linear, in the inner downy within. The silky pappus is white, and less than the fruit, which is reddish-brown, and has prominent ribs. The plant is 2-3 ft. high, and is in flower in July

and August. As the Latin specific name implies, the plant is biennial.

Prickly Lettuce (*Lactuca Scariola*, L. = *Serrula*, L.).—The habitat of this plant is waste ground. The habit is erect. The juice is very acrid. The plant is rather rough below only. The branches are erect. The upper leaves are erect, arrow-shaped below, clasping, the auricle acute, spreading, wavy, runcinate. The radical leaves are inversely ovate to oblong, wavy, toothed, or runcinate. The flowerheads are yellow, scattered in a panicle, with long spreading branches. The phyllaries are heart-shaped, acute, smooth, juicy, tense. The fruit is grey, pale, with a beak the same length. The plant is 3-5 ft. high, flowering in July and August, and is a herbaceous perennial.

Least Lettuce (*Lactuca saligna*, L.).—The habitat of this plant is waste ground, especially near the sea, shingle, or chalky places. The habit is erect. The plant is devoid of hairs, slender, not so bristly as in *L. virosa*. The stem is wavy, with few branches. The upper leaves are entire, narrow-pointed, arrow-shaped below, clasping, the auricles spreading, acute. The radical leaves are deeply divided nearly to the base. The flowerheads are yellow, the panicle having short, erect branches, more or less spike-like, in alternate tufts, or long clusters. The fruit is grey, the beak twice as long as the fruit. The plant is 1-1½ ft. high, flowering in July and August, and is a herbaceous perennial.

Sow Thistle (*Sonchus oleraceus*, L.).—The habitat of this plant is fields and waste places. The habit is erect. The stem is branched, grooved, tubular. The leaves are flat, lance-shaped, half-clasping, the lower stalked (or stalkless), with acute teeth, entire or deeply divided to the base, the auricles spear-shaped, bluish-green below, lobed, with spinous teeth. The flowerheads are pale yellow, in a sort of umbel, smooth, rarely glandular, crowded, the flower-stalk cottony sometimes. The fruit is pale brown, transversely rough, and ribbed longitudinally, not beaked. The pappus is not stalked, with simple hairs. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous annual.

Salsify (*Tragopogon porrifolius*, L.).—The habitat of this plant is wet meadows and waste places. The plant has the habit of Goat's Beard, and is erect, branched. The leaves are smooth, with a long, narrow point, channelled, the leaf-sheaths enlarged below, the leaves enlarged below, tapering or narrowed towards the point. The flowerheads are purple, in heads. The involucre exceeds the florets, and the stalk is thickened above. The ligule is as long as the phyllaries. The marginal fruits have scale-like tubercles, especially on the ribs. The plant is 1-2 ft. high, flowering from May to July, and is a herbaceous perennial.

ORDER CAMPANULACEÆ

Creeping Bellflower (*Campanula rapunculoides*, L.).—The habitat of this plant is woods, waysides,

and hedges, and it is a casual escape from gardens in many instances. The habit is erect. The stem is smooth or downy, simple, with numerous leaves, nearly round, the radical leaves heart-shaped, on long stalks, rough, unequally scalloped and coarsely toothed, the upper stem-leaves are stalkless and lance-shaped. The flowers are pale blue, bell-shaped, in terminal racemes, turned one way, bent back, the calyx segments drooping at length, and the corolla lobes bent back. The capsule is nearly round, the valves at the base. The plant is 1-2 ft. in height. It flowers in July and August. It is a herbaceous perennial.

ORDER PRIMULACEÆ

Punctate Loosestrife (*Lysimachia punctata*, L. = *L. verticillata*, Bieb.).—The habitat of this species is damp, shady places, waste places. The habit is erect. The stem is downy. The leaves are downy, ovate, lance-shaped, opposite or in whorls, stalked, dotted, the upper leaves narrower. The flowers are yellow, with a corolla fringed with hairs, the segments ovate, glandular, the stalks in the axils, opposite or whorled, 1-flowered, downy, rarely branched, not so long as the leaves. There are 5 stamens. The plant is 1-1½ ft. high, flowering in June and July, and is a herbaceous perennial.

Ciliate Loosestrife (*Lysimachia ciliata*, Ait.).—This plant is found near gardens and waste places. The habit is erect. The stem is tall, rigid. The leaves are opposite, ovate to lance-shaped, not dotted, more or less heart-shaped, the stalks fringed with hairs. The flowers are pale yellow, the corolla - segments round, scalloped. The flower-stalks are axillary, opposite or in whorls. There are 10 anther-stalks, free, 5 being functionless. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER BORAGINACEÆ

Madwort (*Asperugo procumbens*, L.).—This species is a weed of rich waste or cultivated ground, and has been largely introduced with grain. The habit is prostrate, then ascending. The plant is prickly. The stems are stout or slender, soft, simple or branched, angular, ridged, the prickles shortly hooked and scattered, turned downwards. The leaves are blunt or acute, hairy, the lower stalked, the upper stalkless, linear to oblong, thin. The flowers are blue, small, solitary, axillary, shortly-stalked. The calyx in fruit has unequal lips, fan-shaped with palmate lobes, the ultimate flower - stalks are short, curved downwards. The receptacle has 2 membranous scales formed of the detached cuticle of the calyx. The plant is 6-18 in. high, flowering from June to August, and is a herbaceous perennial.

Common Alkanet (*Anchusa officinalis*, L.).—This plant is found on ballast hills, sandbanks, hedges, field borders, near gardens, waste places. The habit is erect. The root is stout. The plant is densely softly hairy. The stem is rough, with

the hairs bent down, angular, simple or branched. The radical leaves are narrowed into long, winged stalks. The stem-leaves are not stalked, and are oblong to lance-shaped, linear to oblong, the upper half-clasping. The flowers are purple, more or less stalkless, in crowded, one-sided spikes, or in pairs. The bracts are ovate to lance-shaped. The calyx-segments are blunt, ovate to lance-shaped, hairy both sides, narrow, longer than the tube. The scales of the corolla are hairy, white, papillose. The small nutlets are brown. The plant is 1-2 ft. high, flowering from June to August, and is a herbaceous perennial.

Evergreen Alkanet (*Anchusa sempervirens*, L.).—The habitat of this plant is hedges, waste places, near ruins, waysides. The habit is erect. The root is stout. The stem is rough, with spreading hairs, which are turned downwards, simple. The radical leaves are oblong to ovate, long-stalked, the stem-leaves are ovate, on short stalks, acute. The flowers are salver-shaped, bright blue, on short stalks, in cymes in axillary pairs, which are very hairy, long-stalked. The flower-stalks are spreading, slender, and bear 2 dense spikes with an intermediate flower. The calyx-segments are narrow, linear, hairy outside. The bracts are very small, lance-shaped. The scales of the corolla are downy, white. The nutlets are small, netted. The plant is 1-3 ft. high, flowering from May to July, and is a herbaceous perennial.

Harlequin Weed (*Myosotis versicolor*, Sm.).—The habitat of this plant is waste ground, dry sandy places, meadows, and banks. The plant has the rosette habit. The stem is usually branched from below, or simple, erect. The leaves are narrow, linear to oblong, more or less acute, the upper sometimes opposite. The flowers are pale yellow, then blue, in long cymes (stalked), small. The calyx is bell-shaped, cleft half-way, with numerous, spreading, hooked, few straight hairs, closed in fruit, oblong, the lobes erect, and longer than the ultimate flower-stalks, which are ascending. The tube of the corolla exceeds the limb, which is concave, and lengthens so that the stamens are as long as the style, which is nearly as long as the calyx. The nutlets are black, and bordered. The plant is 1-10 in. high, flowering from April to July, and is a herbaceous annual.

Jersey Bugloss (*Echium plantagineum*, L.).—The habitat of this plant is dry places. The habit is erect. The rootstock is reddish, spindle-shaped. The stem is ascending or erect, hairy, branched, the lower branches prostrate. The radical leaves are lance-shaped, stalked, blunt. The upper leaves are half-clasping, linear to oblong, heart-shaped below, with lateral ribs, spreading, blunt, enlarged below. The flowers are dark-bluish-purple, or violet, in spreading curved cymes, or long spikes. The sepals are awl-like, lance-shaped. The stamens are hardly longer than the corolla, unequal, short, 2 intermediate and 2 longer. The nutlets are angular, rough. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous biennial.

ORDER SOLANACEÆ

Black Nightshade (*Solanum nigrum*, L.)—The habitat of this plant is waste ground, cultivated ground. The plant is herbaceous and erect in habit. The plant is smooth or downy. The stems are angled, tubercled. The leaves are rhomboid to ovate, wavy, bluntly toothed, narrowed to the stalk. The flowers are white, few, in an umbel-like, lateral cyme, and drooping, on slender stalks. The calyx-lobes are broad, blunt. The corolla-lobes are fringed with hairs, bent back. The fruit-stalks are thickened above. The berries are globular, black. The plant is 6–24 in. high, flowering from June to November, and is a herbaceous annual.

Tea Plant (*Lycium chinense*, Mill. = *L. barbarum*, Auct. angl.)—This plant is found in hedges, &c., gardens. On the coasts of Norfolk, as round Kelling, it appears to be naturalized. The plant has the shrub habit, and is straggling. The branches are pendulous and bear spines. The leaves are narrow, lance-shaped. The flowers are blue. The calyx is 2-lipped, as long as the limb. The anther-stalks are woolly below. The berries are oblong and red. The plant is 4–12 ft. high, flowering from June to August, and is a perennial shrub.

Thorn Apple (*Datura Stramonium*, L.)—This plant is found, as an alien, near towns and villages, having been used formerly medicinally, and in waste places, being rare. The plant is erect in habit. The leaves are ovate, unequally toothed, wavy, smooth. The flowers are white, large, erect. The capsule is erect, spinose, with 4 dissepiments below, 2 at the top. The plant is 1–2 ft. high, flowering from June to September, and is a herbaceous annual.

ORDER SCROPHULARIACEÆ

Hoary Mullein (*Verbascum pulverulentum*, Vill.)—In Britain this plant is a weed of waste ground and waysides. The habit is erect. The plant is mealy. The stem is round. The leaves are stellately downy, broad, the margin with small scallops, matted with mealy, woolly hairs. The stem-leaves are heart-shaped, stalkless, ovate, with long, narrow point. The radical leaves are oblong to elliptic, narrowed into a stalk. The flowers are bright yellow, in a pyramidal, panicle-like raceme, several flowers within each bract, on short stalks, which are woolly. The sepals are small, lance-shaped, woolly, the teeth smooth. The anthers are not decurrent, with the hairs of the anther-stalks white. The capsule is small and ovoid. The plant is 2–4 ft. high, flowering in July and August, and is a herbaceous biennial.

White Mullein (*Verbascum Iychinitis*, L.)—The habitat of this species is roadsides, waste places, and it is largely a casual. In S. England, however, it may be a native in dry pastures and woods, and in the northern part of Europe. The habit is erect. The stem is angular. The leaves are stellately downy, not decurrent, scalloped, smooth

above, woolly and powdery below, the radical leaves elliptic to oblong, wedge-shaped below, hardly stalked, blunt, coarsely scalloped, green above, white beneath. The stem-leaves are stalkless, ovate, long and narrow-pointed. The flowers are white, or yellowish, in narrow, panicle-like racemes, which are erect, with many flowers, several to each bract, short-stalked, small. The stamens are equal, the anthers not decurrent, the stalks having white hairs. The calyx is small, woolly. The style is slender. The capsule is ovoid, small. The plant is 2–3 ft. high, flowering in July and August, and is a herbaceous biennial.

Sage-leaved Mullein (*Verbascum nigrum*, L.)—The habitat of this species is waste places. In the S. of England it may be native on the borders of woods and broken hill-sides. It also occurs on waste ground on the borders of cultivated fields and villages, and by waysides on gravelly soil. The habit is erect. The stem is angular, the covering not matted but hairy. The radical leaves are stalked, ovate to oblong, or lance-shaped, heart-shaped, doubly scalloped. The stem-leaves are hardly stalked, except the upper, ovate to heart-shaped, scarcely white below, stellately downy, not decurrent, smooth above, downy below. The flowers are small, numerous, bright yellow, in clusters, nearly simple, on a long, erect, panicle-like spike or raceme. The flower-stalks are twice as long as the calyx. The sepals are small, tomentose, lance-shaped. The stamens are equal, the hairs on the stalks purple. The anthers are not decurrent. The seeds are brown, squarish, blunt both ends. The plant is 1–3 ft. high, flowering from June to October, and is a herbaceous biennial.

Moth Mullein (*Verbascum Blattaria*, L.)—The habitat of this species is gravelly banks, waste places. It is widely dispersed in the New and Old Worlds, cultivated ground, waste places since the seventeenth century, throughout Central and S. Europe. The plant is erect in habit, and nearly hairless. The stem is more or less angular, slender, branched. The radical leaves are ovate-oblong to lance-shaped, blunt, scalloped, lobed, wavy, or more or less pinnatifid. The stem-leaves are small, stalkless, ovate, not decurrent, half-clasping, oblong, acute, heart-shaped, irregularly toothed, more or less scalloped. The flowers are bright yellow, or cream, loose or dense, in a slender, glandular, hairy panicle, the lower bracts leafy. The sepals are oblong, large. The anthers of long stamens are decurrent, with purple hairs on the stalks, 2 longer, hairy on the outside. The ultimate flower-stalks are solitary, about twice as long as the bracts, twice as long as the calyx. The capsule is nearly round. The plant is 1–3 ft. high, flowering from June to October, and is a herbaceous biennial.

Yellow Figwort (*Scrophularia vernalis*, L.)—The habitat of this plant is waste places and plantations, and it is an escape from gardens. The habit is erect. The rootstock is creeping. The plant is glandular, hairy. The stem is more or less 4-angled, or winged, hairy. The leaves

BRITISH FLORA

are broadly ovate, triangular, deeply doubly scalloped, toothed, lobed, heart-shaped to acute, downy. The flowers are yellow, inflated, with a narrow mouth, in axillary, terminal cymes or corymbs, umbel-like. The bracts are leaf-like. The 5 sepals are oblong, with the apex turned back, not bordered. The flower-stalks are short or slender. The corolla is pitcher-shaped. The capsule is broadly ovoid, long, and narrow-pointed, acute. The plant is 1-3 ft. high, flowering from April to June, and is a herbaceous perennial.

Grey Field Speedwell (*Veronica polita*, Fries = *V. didyma*, Ten.).—The habitat of this plant is cultivated ground, fields, waste places. The leaves are all stalked, heart-shaped to ovate, cut, toothed, not so long as the flower-stalks, broader than in *V. agrestis*, and with deeper irregular teeth. The flowers are bright blue, the sepals broadly ovate, long and narrow-pointed, more or less acute, the corolla large. The stamens are inserted at the bottom of the corolla. The capsule consists of two swollen lobes, with short, dense hairs without glands, and some glandular, shorter hairs, or smooth. The seeds are 8-12 in a cell. The plant is 4-8 in. high, flowering from April to September, and is a herbaceous annual.

Veronica peregrina, L.—The habitat of this plant is dry fields. The stem is erect, with blunt leaves, narrow below. The lower leaves are oblong, inversely egg-shaped, the upper are bracts. The flowers are numerous, small, white with a pinkish tinge, and less than the bracts, in a loose raceme, slightly spiky. The flower-stalk is very short, and the style also. The sepals are linear, lance-shaped. The capsules are inversely heart-shaped, smooth, not so long as broad, with rounded lobes. The plant is 2-5 in. in height. It flowers in May, and is an annual.

Veronica repens, D.C.—This plant occurs in this country only as a weed in nursery grounds. The stem is prostrate, rooting. The habit is creeping. The leaves are oval to rounded. The branches are short. The flowers are bluish-red. The style is three times as long as the capsule. The plant is a herbaceous perennial, flowering in July.

Veronica hybrida, L.—The habitat of this species is calcareous or limestone cliffs in the W. of England and Wales. The habit is as in the last, but this plant is taller. The lower leaves are oval with a wedge-shaped base, or ovate with a rounded or slightly heart-shaped base. The leaves are stalked, broader, and are coarsely toothed throughout. The plant is 6-15 in. in height.

ORDER VERBENACEÆ

Vervain (*Verbena officinalis*, L.).—The habitat of this plant is dry waste ground, waste places. The habit is erect. The plant is downy, with stiff hairs. The rootstock is woody. The stems are rigid, branched above, solitary, 4-angled, hairy. The leaves are opposite, oblong, ovate, trifid, and entire, or laciniate, with many acute or blunt segments, the upper narrower, rough, lobed, and

coarsely toothed. The flowers are lilac or pale-purple, small, distant, in slender, dense spikes, afterwards lengthening, panicle. The bracts are ovate, acute, half as long as the calyx, which is half as long as the tube of the corolla. The limb of the corolla is short. The nutlets are blunt, granulate. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

ORDER LABIATEÆ

Round-leaved Mint (*Mentha rotundifolia*, Huds.).—The habitat of this plant is wet places, waste places. The habit is as in *M. hirsuta*. The plant is much-branched. There are leafy aerial stolons. The leaves are without stalks, or only the lower ones are stalked. The leaves are hairless, ovate to oblong, lance-shaped, glandular below, blunt, scalloped, wrinkled above, shaggy or woolly below. The flowers are lilac, pink or white, cylindrical, loose, in interrupted terminal spikes. There are ovate, awl-like, long, narrow-pointed bracts. The throat of the calyx is naked, with awl-like teeth, half as long as the tube. The corolla is hairy, smooth within. The plant is 2-3 ft. in height, flowering in August and September, and is a herbaceous perennial.

Spearmint (*Mentha viridis*, L. = *M. spicata*, L.).—The habitat of this plant is wet marshy places, waste places. It has been regarded as possibly a cultivated form of *M. sylvestris*, but differing in its pungent smell. There are aerial, leafy stolons. The leaves are smooth (as the rest of the plant), or nearly so. They are stalkless, lance-shaped to oblong, acute, coarsely toothed, smooth above, glandular below. The flowers are lilac, in loose, cylindrical, slender spikes, which are interrupted, with distant whorls, with awl-like bracts. The throat of the calyx is naked. The corolla is smooth. The plant is 1-3 ft. in height, and flowers in August and September, being a herbaceous perennial.

Long-leaved Mint or Horse-mint (*Mentha longifolia*, Huds. = *M. sylvestris*, L.).—The habitat of this plant is moist waste places, damp waste ground. The habit is as in the last. The stem is robust, woolly, with white hairs. The leaves are stalkless, or more or less so, ovate to lance-shaped, oblong to inversely ovate, heart-shaped below, more or less acute, coarsely toothed, more or less smooth above, woolly below. The flowers are lilac, in continuous, slender spikes, which are linear to cylindrical, close and dense. The bracteoles are awl-like, the bracts lance-shaped. The ultimate flower-stalks are hairy. The calyx-teeth are lance-shaped. The corolla is hairy. The plant is sweet-scented. It is 2-3 ft. high, and is in flower in August and September. It is a herbaceous perennial.

Lesser Calamint (*Calamintha parviflora*, Lam. = *C. Nepeta*, Savi).—The habitat of this plant is dry places, hedge-banks. The habit is more or less erect. The stems are numerous, from the crown of the root, with short, erect branches. The leaves are more or less entire, shortly-stalked, ovate, coarsely-toothed, greyish-green, scalloped.

The flowers are lilac-blue, in compound whorls, of about 10 flowers, in one-sided cymes. The calyx is bell-shaped, erect, on the ultimate stalk, the teeth more or less equal, fringed with hairs, obscurely 2-lipped, the upper shorter, broader, triangular, bent-back, the lower awl-like, and with prominent, protruding hairs in the throat. The common stalk is about as long as the partial stalk. The middle lobe of the lower lip of the corolla is broad, blunt. The plant is 9-20 in. high, flowering in July and August, and is a herbaceous perennial.

Calaminth (*Calamintha officinalis*, Scheele = *C. menthaefolia*, Host = *C. montana*, O. Kuntze = *Satureia Calamintha*, Sch.).—The habitat of this species is dry banks, hedge-banks. The habit is erect. The stems are wavy, usually solitary or few from the root, with long, ascending branches. The leaves are dark-green, broadly ovate, long-stalked, scalloped, coarsely-toothed. The flowers are purplish or pink, with dark-purple markings in compound whorls, in few-flowered, slightly forked, one-sided cymes, the flowers at an angle with the stalks. The calyx is tubular, 2-lipped, bent on the stalk, the teeth having long bristles, the upper triangular, ascending, the lower twice as long, awl-like, the hairs on the throat not protruding. The middle lobe of the lower lip of the corolla is longest, and separated from the laterals. The flower-stalks are short, the flower-stalk of the cyme half as long as the primary partial stalk. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

Balm (*Melissa officinalis*, L.).—Balm is found in waste places. The habit is erect. The stems are numerous. The leaves are ovate, scalloped to toothed, stalked, wrinkled above, acute, paler below, and are sweet-smelling. The flowers are white, with rose-red spots, in axillary one-sided whorls, shortly-stalked. There are small, oblong bracteoles. The calyx is bell-shaped, enlarged in front, 2-lipped, the upper lip flat, blunt, with 3 short, triangular, broad, bristle-like teeth, the lower having 2 lance-shaped, slender, straight teeth. The nutlets are smooth. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

Catmint (*Nepeta Cataria*, L.).—The habitat of this plant is banks and waste places, hedges. The habit is erect. There is a stout rootstock. The stems are branched, leafy. The plant is hoary or downy. The leaves are ovate to heart-shaped, deeply-lobed below, cut, toothed, white and downy below, stalked, acute. The flowers are pale-blue, white, or with purple dots, in shortly-stalked, dense whorls, in cymes. The upper bracts are small. The upper whorls are stalkless, many, dense, in broad heads. The bracteoles are longer than the ultimate flower-stalks. The calyx is downy, with awl-like teeth, the upper longest. The tube of the corolla is curved. The stamens curve outwards at first. The nutlets are smooth, without hairs, granulate. The plant is 2-3 ft. high, flowering from July to September, and is a herbaceous perennial.

White Horehound (*Marrubium vulgare*, L.).—The habitat of this plant is downs on calcareous soils in England, where it is much grown in cottage gardens. It is frequently naturalized by roadsides and waste ground. The habit is erect. The plant is hoary or woolly. The rootstock is short and stout. The stems are stout, branched, leafy. The leaves are ovate, rounded, heart-shaped or wedge-shaped at the base, scalloped, narrowed into broad, long leaf-stalk, hoary and rough, woolly, leathery, wrinkled, with stout nerves, usually spreading from the leaf-stalk. The flowers are numerous, white, in dense whorls, axillary, flattened, softly hairy. The calyx is oblong. The teeth of the calyx are awl-like, spreading, hooked at the tip, spinous, woolly below, the upper half smooth. The tube of the corolla is slender, the upper lip long and divided into 2 nearly to the base. The plant is 1-2 ft. high, flowering from July to October, and is a herbaceous biennial or perennial.

Stachys annua, L.—The habitat of this plant in this country is wheatfields. The habit is erect. The lower leaves are ovate to oblong, smooth, blunt, scalloped, toothed. The flowers are creamy-white, 4-6, in whorls, the bracts lance-shaped, acute, small, long and narrow, and blunt-pointed. The calyx-teeth are lance-shaped, acute. The corolla-tube is longer than the calyx. The nutlets are minutely rough. The plant is 4-12 in. high, flowering from July to September, and is a herbaceous annual.

Motherwort (*Leonurus Cardiaca*, L.).—The habitat of this plant is hedges and waste places, and it is found in the neighbourhood of gardens where it is cultivated. The habit is erect. The plant is downy. The stems are stout, with prominent angles, leafy. The leaves are close. The lower leaves are palmate, 5-cleft, with slender long stalks, ovate or rounded to heart-shaped, lobed, cut, toothed, the stem-leaves are stalked, wedge-shaped or inversely ovate to oblong, the lower much divided, the upper 3-fid, entire, 3- (or more) nerved, with acute lobes. The flowers are reddish-white, stalkless, in crowded whorls. The bracts are numerous, large, leaf-like, stalked. There are small bracteoles, awl-like. The calyx-teeth are broadly triangular, sharp. The upper lip of the corolla is straight, hairy, woolly, the helmet nearly flat, the tip spreading, the middle lobe entire. The nutlets are softly hairy at the tip. The plant is 2-3 ft. high, flowering from July to September, and is a herbaceous perennial.

Lamium intermediate, Fr. (= *L. molucellifolium*, Fr.).—This species is found as a weed of cultivated ground as a rule. The plant is succulent. The radical leaves are stalked, the upper kidney-shaped to heart-shaped, stalkless, scalloped. The flowers are as in the next, in distant whorls below. The calyx-teeth are purple, rigid, longer than the tube, straight, with stiff hairs, spreading. The corolla-tube is cylindrical, equal, with a ring of hairs within, longer than the calyx, the lateral lobes toothed. The nutlets are large, three times as long as broad, with a large, triangular, ter-

minal, oblique space. The plant is in flower from May to September, and is a herbaceous annual.

Lamium hybridum, Vill. (= *L. incisum*, Willd. = *L. dissectum*, With.).—The habitat of this species is cultivated and waste ground. This plant has been considered a sub-species of *L. purpureum*, from which it differs in the more deeply scalloped leaves, and bracts wedge-shaped below, and erect calyx-teeth, shorter corolla-tube with a scarcely perceptible ring of hairs. The leaves are stalked, heart-shaped, cut to toothed, the upper broadly ovate, crowded, the upper wedge-shaped below. The flowers are reddish, the whorls touching. The calyx-teeth are as long as, or longer than the tube, spreading. The corolla-tube is straight, naked within, equal, cylindrical, with a faint ring of hairs. The nutlets are smooth. The plant is 4–18 in. high, flowering from April to October, and is a herbaceous annual.

Henbit Dead-nettle (*Lamium amplexicaule*, L.).

The habitat of this plant is waste sandy places. It is a weed of cultivated and waste ground. Dry places, sandy and chalky fields are also the habitat of this species. The habit is erect. The stems are branched from the base. The plant is hairy or smooth. The leaves are small, stalked, rounded, cut, scalloped, in distant whorls, the lower ones long-stalked, lobed, the base rounded or heart-shaped, wrinkled, the upper stalkless, clasping (hence *amplexicaule*). The flowers are purplish-red, the lower in distant whorls. The bracts are stalkless, broader than long, the bases overlapping. The calyx-teeth meet in fruit, and are as long as the tube, or longer, green. The corolla is long, slender, sometimes imperfect, straight, downy, very slender, with no hairs within. The nutlets are small, smooth, three times as long as broad. The plant is 4–12 in. high, flowering from May to August, and is a herbaceous annual.

Variegated Dead-nettle (*Lamium maculatum*, L. = *L. levigatum*, Sm.).—This species is found in waste places near gardens, in which it is much cultivated. The plant is allied to *L. album*, but differs in the calyx and corolla, and has fewer rarely white flowers. The stem is hairy or smooth. The leaves are heart-shaped to ovate, narrow-pointed, deeply toothed, scalloped, all stalked, marked with white or green, triangular to heart-shaped, wrinkled, hairy or downy. The flowers are purple, with transverse hairs in the curved equal corolla-tube, narrowed below, enlarged in the throat. The calyx-teeth are broad, bent-back as long as the tube, which is oblique, or longer. The corolla exceeds the calyx. The anthers are hairy. The plant is 6–18 in. high, flowering from May to September, and is a herbaceous perennial.

Ballota ruderalis, Sm.—The habitat of this species is waste places. The plant has an agreeable scent. The calyx-teeth are lance-shaped, gradually acuminate, erect. The plant is softly hairy. In other respects it resembles the last. It is 2–3 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER PLANTAGINACEÆ

Plantain Ribgrass (*Plantago major*, L.).—The habitat of this plant is pastures, waste places. The plant has the rosette habit. The rootstock is stout, blunt. The plant is smooth or hairy. The leaves are radical, stalked, oblong, ovate, toothed, 3–7 ribbed, the stalks broad, short, channelled, long, ascending. The scape is as long as the leaves, short, not furrowed. The flowers are in a slender, long spike, longer than the scape, which is round, with ovate bracts, keeled, as long as the calyx. The sepals are free, and have a blunt, well-marked dorsal rib, and have membranous borders. The corolla-tube is smooth. The anthers are purple, on short stalks. The capsule is 2-celled, with 8–16 seeds. The seeds are flat in front, black, rough, mucilaginous externally. The plant is 2–9 in. high, or more, flowering from May to September, and is a herbaceous perennial.

ORDER AMARANTHACEÆ

Amaranth (*Amaranthus retroflexus*, L.).—The habitat of this plant is waste ground. The habit is erect. The stem is stout, hairy, downy. The leaves are oval, stalked. The flowers are in terminal, large, dense, compound or axillary spikes, the upper grouped in large, dense, terminal spikes. The bracts are awl-like, longer than the calyx. The flowers are 5-lobed. There are 5 stamens. The plant is 1–2 ft. in height, flowering from July to September, and is a herbaceous annual.

Amaranthus Blitum, L.—The habitat of this plant is waste places near towns. The habit is prostrate. The stem is smooth, spreading. The leaves are oblong, ovate, long-stalked. The flowers are 3-fid, very small, in small, axillary, lateral clusters, the upper in a small, naked spike. There are 3 stamens. The plant is 1–2 ft. high, flowering from July to September, and is a herbaceous annual.

ORDER CHENOPODIACEÆ

Stinking Goosefoot (*Chenopodium Vulvaria*, L. = *C. olidum*, Curt.).—The habitat of this plant is roadsides, and dry waste places near houses. It is possibly native on shores and pebbly beaches in the S. of England and Guernsey. The habit is erect or ascending. The plant is mealy, covered with a greasy powder, and fetid, spreading. The branches are opposite, spreading. The leaves are rhombic, ovate, triangular, mealy, entire, stalked, acute, greyish-green. The leaf-stalk is as long as the leaves, or less. The flowers are in small, dense, leafless spikes, which are terminal and axillary. The outer perianth-segments are not keeled, and cover the utricle. The parts of the flower are in fives. The seeds are black, shining, rough, with small dots. The plant is 6–18 in. high, flowering from July to September, and is a herbaceous annual.

Allseed Goosefoot (*Chenopodium polyspermum*, L.).—The habitat of this plant is cultivated ground

and manure heaps, damp waste places, and it may be native in damp woods in the S. of England. The habit is erect or ascending. The plant is bluish-green. The stems are branched, numerous, spreading, leafy. The leaves are entire, ovate, elliptic, blunt or acute, shortly stalked, membranous. The flowers are very small, in long, axillary, and terminal, leafless racemes, cyme-like, simple or branched, the branches slender and spreading. The outer perianth-segments are not keeled, not so long as the utricle. The seeds are very small, dark-brown, shining, rough, minutely-dotted, blunt-bordered. The plant is 6-24 in. high, flowering from July to September, and is a herbaceous annual.

Chenopodium opulifolium, Schrad.—The habitat of this plant is roadsides, waste ground. It has affinity with *C. album*. The leaves are broadly rhomboidal, ovate, triangular, more or less 3-lobed, short, unequally toothed, blunt, coarsely and unevenly scalloped, toothed, the teeth long and blunt-pointed. The stem-leaves are short and very blunt. The leaf-stalks are long and slender. The inflorescence is bluish-green. The plant is 1-3 ft. high, flowering in August and September, and is a herbaceous annual.

Fig-leaved Goosefoot (*Chenopodium ficifolium*, Sm. = *Ch. serotinum*, L.).—The habitat of this plant is waste places, rich soil, roadsides, near villages, cultivated ground. The habit is erect. The plant is mealy, limp. It resembles *C. album*. The leaves are blunt. They are unequally 3-lobed, spear-shaped, oblong, lance-shaped, the middle lobe the longest, wedge-shaped, ascending, wavy, toothed, blunt. The upper leaves are entire, linear, lance-shaped, the basal lobes ascending. The flowers are in a leafless inflorescence, or in a spike, or cymose raceme, leafy only below, with erect branches. The perianth almost covers the utricle. The seeds are minutely pitted, dotted, not keeled, shining, blunt. The plant is 1-3 ft. high, and flowers from July to September, being a herbaceous annual.

Upright Goosefoot (*Chenopodium urbicum*, L.).—The habitat of this plant is waste places. It has not been recorded from native habitats. The habit is erect. There is little meal on this plant. The stem has alternate bands of green and white, and is stout, with few branches. The leaves may be as broad as long, triangular, toothed, the teeth short, triangular, wavy, or nearly entire below, narrowed into the leaf-stalk, which is shorter, winged above. The lateral veins are spreading. The flowers are in a long, erect, simple or compound dense spike, nearly leafless above, axillary or terminal. The perianth-segments are not keeled, and do not cover the utricle, being broadly membranous. The seeds are rough, blunt-bordered. The plant is 1-3 ft. high, and flowers in August and September, being a herbaceous annual.

Thorn-apple Goosefoot (*Chenopodium hybridum*, L.).—The habitat of this plant is cultivated ground, fields, and waste places. The habit is erect. The plant has a heavy odour. The stem is stout and branched. The leaves are large, long-pointed,

broadly ovate, heart-shaped, pale green, membranous, angular, toothed, the teeth large, distant, 2-4 on each side, 3-5 nerved at the base. The flowers are in loose, axillary, nearly leafless corymbs or spikes, in large clusters. The perianth does not cover the utricle. The seeds are coarsely minutely pitted, not keeled, opaque, large. The plant is 6 in. to 3 ft. high, flowering in August and September, and is a herbaceous annual.

Sowbane Goosefoot (*Chenopodium murale*, L.).—The habitat of this plant is waste places near houses, towns, and villages. It may be a native on the beaches of Kent, Sussex, Dorset. The habit is erect or ascending. The plant is nearly devoid of hairs, rather strong smelling. The branches are prostrate. The leaves are ovate, rhomboidal, triangular, wedge-shaped below, where they are entire, acute, unequally sharply toothed above, bright green, shining, mealy when young. The leaf-stalk is not so long as the blade. The upper leaves are narrower, coarsely toothed. The flowers are in short, dense spikes, with spreading branches, the flowers cymose. The perianth-segments have a slight keel, and nearly cover the utricle, having a narrow membranous border. The seeds are acute, sharply keeled, minutely granular, dotted, opaque. The plant is 6 in. to 1½ ft. high, flowering in August and September, and is a herbaceous annual.

Red Goosefoot (*Chenopodium rubrum*, L.).—The habitat of this plant is waste places. It may be native on muddy shores. The habit is erect or ascending. The plant is smooth, shining. The stem is leafy throughout, and has alternate bands of green, white or red. The leaves vary considerably. They are triangular, rhomboidal to ovate, entire, irregularly toothed, blunt or acute, wavy, or entire below, 3-nerved at the base. The flowers are in erect, dense, leafy, panicled, compound, terminal and axillary spikes. The flowers are frequently incomplete and crowded, the terminal flower 5-cleft. The calyx is 4 or 5 cleft. There are 1-2 stamens. The perianth-segments are not keeled and cover the utricle. The seeds are very small, vertical, smooth, shining, brown, obscurely keeled or blunt. The pericarp is very loose. The plant is 2 in. to 3 ft. high, flowering from April to October, and is a herbaceous annual.

Oak-leaved Goosefoot (*Chenopodium glaucum*, L.).—The habitat of this plant is rich waste places. The habit is prostrate. The stems are usually spreading, widely-branched, shining, smooth. The leaves are green above, white, bluish-green, mealy below, oblong, wavy toothed, blunt or round, wedge-shaped below. The flowers are in short, erect, simple, leafless, terminal and axillary, dense spikes. The perianth-segments are keeled and almost cover the utricle, leaving a narrow membranous border. The seeds have an acute keel, and are reddish, very small, the horizontal ones largest, the others vertical, netted, granular. The plant is 4-18 in. high, flowering from July to September, and is a herbaceous annual.

Orache (*Atriplex hastata*, L.).—The habitat of this plant is waste places and cultivated ground.

The habit is erect or prostrate. The plant is dark-green, mealy. The lower leaves are opposite, spear-shaped (hence *haslata*), triangular, the lobes spreading, horizontal, acute, entire, and the upper leaves are lance-shaped, entire. The flowers are in simple or panicled spikes, interrupted, leafy below. The fruiting perianth-segments are triangular, rhomboidal, united below, prickly on the back, longer than the fruit. The seeds are large and small, the former dark-brown, rough, flattened, the smaller black, smooth, shining. The plant is 6 in. to 4 ft. high, flowering from July to September, and is a herbaceous annual.

Atriplex deltoidea, Bab.—The habitat of this plant is cultivated ground and waste places. The habit is more or less erect. The leaves are mainly opposite, triangular, spear-shaped, with spreading lobes, the upper ones also spear-shaped. The flowers are in dense spikes, panicled, the terminal short. The perianth-segments are blunt, scarcely exceeding the utricle, and are ovate to triangular, prickly on the back, united only below. The seeds are thick, black, polished, some dark-brown, larger, and with large perianths. The plant is 6-24 in. high, flowering from June to October, and is a herbaceous annual.

ORDER POLYGONACEÆ

Dock-leaved Knotweed (*Polygonum lapathifolium*, L.).—The habitat of this plant is fields and waste places. In habit it is prostrate, rooting below, branched, smooth or glandular, nodes thickened, stalked, spotted red, yellow, green. The leaves are shortly stalked, egg-shaped, or oblong, lance-shaped, not spotted. The flowers are in a cylindrical raceme, terminal or lateral, the flower-stalk rough. The sepals are glandular and rough. The lower ocreæ or stipules are loose not fringed, the upper shortly fringed. The styles are free, the stamens 5-6. The anthers do not project. The nut is flattened at the sides. The plant is 1-3 ft. high. It is in flower from July to September, and is a herbaceous annual.

Spotted Persicaria (*Polygonum maculatum*, Trin. and Dyer).—The habitat of this plant is reservoir banks, damp gravelly places, or waste places. The habit is similar to the last, the leaves spotted, broadly lance-shaped, glandular below, wavy. The flowers are in long, slender, crowded racemes, the sepals exceeding the fruit. The ocreæ are shortly fringed and loose. The calyx is glandular, and also the flower-stalk. The nut is flattened along the border. The height is from 1 to 3 ft. The flowers are in bloom between July and October. Spotted Persicaria is a herbaceous annual.

Buckwheat (*Fagopyrum esculentum*, Mœnch = *F. sagittatum*, Gilib. = *Polygonum Fagopyrum*, L.).—This plant is found around towns and villages, or waste places, and woods where game is preserved, being used as food for pheasants, &c. The habit is erect. The plant is not prickly. The leaves are heart-shaped, arrow-shaped, acute. The flowers are in cymose panicles. There are 8

stamens. The nut is 3-angled, acute, the angles entire. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous annual.

Fiddle Dock (*Rumex pulcher*, L.).—The habitat of this plant is waste places on dry soil, and it may be wild in English pastures. The habit is erect or ascending. The stems are wavy, with slender branches which are spreading, the tips bent-down. The longer leaves are fiddle-shaped, oblong to heart-shaped, blunt, the upper lance-shaped, acute. They soon wither. The margin is scalloped. The leaf-stalk is slender. The flowers are in a panicle with spreading branches, leafy throughout, in distant leafy whorls. The perianth-segments are triangular to ovate, veined, deeply toothed to above the middle, pale, wedge-shaped below, pitted, netted, the teeth short, straight. The tubercle is oblong, prickly. The fruit is ovate, acute. The plant is 6-18 in. high, flowering from July to September, and is a herbaceous perennial.

Rumex scutatus, L.—The habitat of this plant is old walls near houses, waste places. The leaves are spear-shaped to ovate, greyish-green, fiddle-shaped. The perianth-segments are not tubercled, and are more or less round, heart-shaped, entire, membranous. The flowers are green, polygamous. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER EUPHORBIACEÆ

Sun Spurge (*Euphorbia helioscopia*, L.).—The habitat of this spurge is cultivated ground, waste places, fields. It is nowhere native. The habit is erect. The plant is more or less bluish-green. The stems are simple or 3-fid below. The plant is smooth, rarely hairy. The leaves are narrowly inversely ovate, inversely heart-shaped, coarsely toothed above the middle, more or less stalked, sometimes wedge-shaped, with a rounded tip, membranous, the lower smaller. The bracts are the same, the upper ovate to heart-shaped. The glands of the involucle are transversely oval, rounded, yellow. The capsule is smooth. The flowerheads form an umbel of 5, 3-fid, forked rays. The seeds are netted, rough, deeply-pitted, brown. The plant is 6-18 in. high, flowering from June to October, and is a herbaceous annual.

Broad-leaved Spurge (*Euphorbia platyphyllus*, L. = *E. stricta*, Sm.).—The habitat of this plant is fields, cornfields, and waste places, being cultivated. It has not been found in native habitats. The plant is smooth or hairy. The habit is erect. The stems are stout, simple, with numerous, alternate, slender, ascending branches. The leaves are linear to oblong, or inversely ovate to lance-shaped, heart-shaped below, stalkless, spreading or bent back, acute, with small, coarse teeth above the middle. The flowerheads are in umbels of 3-5 rays, several times forked. The partial bracts are heart-shaped, short, broad, with a small point. The glands of the involucle are more or less round. There are 7-8 stamens in each involucle. The capsule is smooth, with small warts, which are hemispherical. The seeds are smooth, olive-brown,

inversely ovate, shining. The seed-stalk is nearly kidney-shaped. The plant is 6-30 in. in height, flowering from July to October, and is a herbaceous annual.

Euphorbia corolloides, L.—The habitat of this plant is plantations, and the plant is rare. The plant is naked below. The leaves are lance-shaped, with small teeth, woolly. The bracts are oval to oblong, the tertiary bracts ovate, hairy. The flowerheads are in an umbel of 5 rays, 3-fid, and forked. The involucral glands are oval. The capsule is nearly smooth, woolly. The seeds are inversely ovate, minutely dotted, and with faint, netted bands. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous biennial.

Petty Spurge (*Euphorbia Peplus*, L.)—The habitat of this species is waste places, cultivated ground. The habit is erect. The stem is simple, or thrice forked below. The plant is smooth, light-green. The leaves are round to inversely broadly ovate, entire, stalked, thin, the lower leaves more or less rounded. The leaf-stalks are short and slender. The flowerheads are in umbels of 3 repeatedly-forked rays. The bracts are ovate, blunt, with a short point. The involucral glands are 4, moon-shaped, long-horned, slender. The capsule is smooth, small, with keeled valves, thickened, and rough. The seeds are ovoid, deeply pitted, keeled on the dorsal side, whitish, 3-angled, with 2 furrows on the ventral side. The plant is 3-12 in. high, flowering from July to November, and is a herbaceous annual.

Annual Mercury (*Mercurialis annua*, L.)—The habitat of this plant is cultivated ground, waste places, fields, gardens. The habit is erect. The plant is bright-green, smooth. The root is fibrous. The stem is branched. The leaves are membranous, oblong, ovate, lance-shaped, smooth, short-stalked. In the female plants the leaves are narrower, acute, heart-shaped or rounded below, shining, scalloped to coarsely toothed, fringed with hairs. The plant is dioecious or monoecious. The female flowers are in clusters, nearly stalkless, sometimes with a few male flowers. The styles are spreading, with the stigmatic surfaces on the front sides. The capsule is small, warted, roughly hairy. The seeds are brown, netted. The plant is 6-18 in. high, flowering from July to November, and is a herbaceous annual.

ORDER URTICACEÆ

Little Nettle (*Urtica urens*, L.)—The habitat of this plant is cultivated and waste ground and fields. The habit is erect. The stem is branched, with stinging hairs. The leaves are opposite, elliptic, ovate to oblong, stalked, coarsely toothed, the teeth few and the terminal one oblong. The flowers are few, arranged in axillary panicles or spikes in pairs, which are simple, shorter than the leaf-stalk. The plant is usually monoecious. The flower-stalks are long or short. The seeds are oblong. The plant is 9 in. to 2 ft. high, flowering from June to September, and is a herbaceous annual.

ORDER IRIDACEÆ

Iris (*Hermodactylus tuberosus*, Mill.)—This plant is often cultivated, and has been found in old gardens, orchards, hedgebanks. The habit is the flag habit. The root is tuberous. The leaves are tetragonal. The plant is 1-flowered, the flowers bluish-brown. The perianth segments are acute, velvety, purple. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Glabrous Finger Grass (*Panicum glabrum*, Gaud.)—The habitat of this species is sandy soil, sandy heaths, and waste places in the south and east. It has the typical grass habit. The root is fibrous. The stem is largely prostrate, the leaves are flat, smooth, narrow, the sheaths also smooth, with a hairy border. The ligule is short. There are 3-fingered, wavy, channelled spikes with spikelets, with one flower, in pairs, turned all one side. The spikelets are purplish, stalked, one stalk longer than the other. The empty glumes are hairy, and the flowering glume has no awn. The fruit is compressed or flattened at the border. The plant is 6-19 in. high. Flowers are to be found in July and August. It is a herbaceous annual.

Cockspur Grass (*Panicum crus-galli*, L.)—Cockspur Grass is found in fields and waste places in S. England, on damp and waste cultivated ground. The plant has the grass habit. The stems are stout and ascending. The leaves are flat, smooth, the edges rough, wavy. There is no ligule. The flowers are in a panicle, with the branches more or less all on one side. The rachis is 3-angled, downy. The flower-stalk is hairy. The spikes are 1-flowered, alternate or opposite, the spikelets close, dark-purplish. They are plano-convex, greenish, the upper empty glume is hairy, pointed, or with a rigid awn. The flowering glume is polished. The plant is 9-24 in. high, flowering from July to September, and is a herbaceous annual.

Green Bristle Grass (*Setaria viridis*, Beauv.)—In the British Isles this plant is only a casual, found in waste places. The plant has the grass habit. The stems are more or less erect, roughish above. The leaves are flat, smooth, rough at the border. The sheaths are smooth, the margin fringed with hairs, with a ring of hairs at the mouth. The panicle is spike-like, green, with branches in whorls, hairy, 3-sided. The bristles are wavy, purplish, clustered, rough, the teeth directed forwards. The spikelets are blunt, elliptic. The empty glumes are membranous, the flowering glumes shining, furrowed, dotted. The plant is 9-18 in. high, flowering from June to September, and is a herbaceous annual.

Setaria glauca, Beauv.—This plant is a weed of cultivated and waste ground. The panicles are spike-like, the involucral bristles have ascending teeth, and the palea is transversely rough. The

plant is 9-18 in. high, flowering from June to September, and is a herbaceous annual.

Whorled Bristle Grass (*Setaria verticillata*, Beauv.).—This species is found in cultivated fields. The habit is as in *S. viridis*. The panicle is narrower, spike-like. The bristles are barbed, single or paired, the teeth turned down. The lower palea is smooth. The plant is 9-18 in. high, flowering from June to September, and is a herbaceous annual.

Canary Grass (*Phalaris canariensis*, L.).—Canary grass is found in fields and waste places. The stem is erect, roughish, with a compound terminal panicle. The leaves are flat, the upper sheaths enlarged. The ligule is large. The flowers are in an ovoid or more or less cylindrical spike-like panicle, which is pale-green. The spikelets are rounded. The empty glumes are membranous, acute, with broad, entire wings, a green keel, 2 nerves, and are stout, pale-yellow, variegated with green lines. The flowering glumes are shorter, silky, with obscure nerves. There are 2 rudimentary florets or scales, lance-shaped, acute, half as long as the fertile flowers. The plant is 1-2 ft., flowering from June to September, and is a herbaceous annual.

***Phalaris minor*, Retz.**—This plant is a casual introduced with Turkish barley. The stem bears a single head. The plant is more slender than the common Canary Grass. The panicle is longer, narrower, with smaller, more numerous florets, and with a narrower, toothed keel to the glume. The panicle is cylindrical to oblong, spike-like. The glumes have the keel winged above, the wing toothed near the tip. There is 1 rudimentary floret, narrow, downy, one-third as long as the fertile florets. The lower palea is downy, enclosing the upper, which is narrower and shorter, with a fringe of hairs on the keel. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous annual.

***Phalaris paradoxa*, L.**—The habitat of this species is waste places. The stem is prostrate below, then ascending, branched. The lower part of the spike-like panicle is barren, and there are 6 spikes on a branch. The glumes of the fertile florets have a wing on the keel which has blunt teeth, and is many-veined. There are several rudimentary florets. The plant is 1-3 ft. high, flowering from June to July, and is a herbaceous annual.

Large Quaker Grass (*Briza maxima*, L.).—This species is an occasional escape from gardens, and is cultivated in England. It is naturalized in Guernsey. The spikelets are few, ovate, large, many-flowered. It is 1-1½ ft. high, flowering in May and June, and is a herbaceous annual.

***Festuca ciliata*, Danth. (= *F. barbata*, Gaud. = *F. Danthonii*, A. & G.).**—This plant is a casual near Brighton. The leaves are rolled inwards. The upper sheath nearly reaches the long, narrow, erect, close panicle. The glumes are very unequal, fringed with hairs (hence *ciliata*). The plant is 6-9 in. high, flowering in June and July, and is a herbaceous annual.

Sterile Hedge Brome Grass (*Bromus sterilis*, L.).—The habitat of this plant is fields and waste places, cultivated ground. The root is fibrous. The stems are erect, smooth, leafy. The leaves are flat, downy, broad, limp, ribbed. The sheaths are flattened, smooth or downy. The panicle is very loose, open, drooping, with few long branches, horizontal or drooping, in half whorls. The spikelets are more or less solitary, linear, lance-shaped, the florets distant. They have long awns, and are nodding and green. The empty glumes are long, narrow, the upper twice as long, the flowering glumes are very narrow, ending in a long, straight awn, with 7 ribs, equally distant, the margins transparent. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous annual.

Little Wall Brome (*Bromus madritensis*, L.).—The habitat of this plant is dry places, sandy waste places. It is rough above, smooth below. The stems are rigid, from an ascending base, smooth, leafy. The leaves are narrow, flat, hairy. The sheaths have the hairs turned back, and are round in section. The ligule is short and blunt. The panicle is very loose, open, erect, with few, short, hardly divided, erect branches, oblong, flattened, appressed. The rachis is slender and rough (like the pedicels). The spikelets are dull-green, with a smooth rachilla. The spikelets are linear, lance-shaped. The florets are distant, linear, more or less cylindrical. The lower empty glumes are awl-like, half as long as the upper, which are linear. The flowering glumes are narrow, rough, with 7 close, lateral nerves, the intermediate rib faint, the tip and margins transparent. The awn is slender, not longer than the florets. There are 2 stamens. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous annual.

Field Brome Grass (*Bromus arvensis*, L.).—This grass is found in this country in corn- and clover-fields, being introduced with seeds and foreign grain and hay. It has become naturalized in many parts south of Fife. The root is creeping, fibrous. The stems are smooth. The leaves are hairy below, flat, short. The sheaths are hairy and grooved. The ligule is blunt. The panicle is compound, pyramidal, spreading, drooping, with branches horizontal at length, 5-7-divided, long, roughish, slender, with a few spikelets towards the apex. The spikelets are lance-shaped, linear. The lower flower-stalks are branched, pointed, green or dull-violet. The rachilla is smooth. The empty glumes are ovate to oblong, with a rough keel, the upper largest, acute, or with a short awn. The flowering glumes are overlapping at first, as long as the straight awn. The lower palea is 7-ribbed, with 2 prominent ribs near the margin and sides. The top of the upper glume is halfway to the top of the fourth floret. The anthers are 4 times as long as broad. The plant is 1-3 ft. high, flowering from June to August, and is a herbaceous annual.

***Bromus interruptus*, Druce.**—The habitat of this species is cultivated ground. The plant is like

B. mollis. The panicle is oblong, blunt, erect, rigid. The spikelets are more or less compound, in dense, interrupted clusters. The upper palea is split to the base. The plant is 2-4 ft. high, flowering in June and July, and is a herbaceous annual or biennial.

Rye Grass (*Lolium perenne*, L.).—The habitat of this grass is pastures, waste places. The plant is dark-green. There are leafy, barren shoots. The root is fibrous. The stems are bent below, ascending, hairless, flattened. The leaves are flat, the edges of the young leaves simply folded. The

edges and upper surface are rough. The sheaths are smooth, flattened. There is a short ligule. The spike is simple (6-11 flowered), rigid, stout or slender, and 3-4 flowered. The rachis is smooth, channelled one side. The spikelets are smooth, shining. The empty glumes are shorter than the spikelet, ribbed, linear-lanceolate. The flowering glumes are linear to oblong, round, blunt (or awned), ribbed. The glume equals the lowest flower. The lower palea is awnless. The plant is 1-2 ft. high, flowering from June to October, and is a perennial.

FLOWERS OF THE BOGS AND MARSHES

[Bog and marsh plants may be otherwise described as moor and fen plants. Both require moist conditions, though some moorlands are drier and more allied to heaths. Fen or marsh plants are more allied to aquatic vegetation in requiring more or less partly submerged conditions. But both bog and marsh plants are allied in the fact that they flourish on a layer of peat, thick in the former, thin in the latter case. An essential difference is the character of the mineral salts, acid in the former, alkaline in the latter. Transitions from these states towards heath plants on the one hand, aquatic plants on the other, are to be found, and hence some plants occurring in this section may be found in either of the others.]

ORDER RANUNCULACEÆ

Alpine Meadow Rue (*Thalictrum alpinum*, L.).—The habitat of this plant is the higher parts of mountains, alpine and subalpine bogs; and it is plentiful on wet rocks, and in swampy spots on moors. The plant is erect in habit. The stem is wiry, simple, naked, sometimes stoloniferous, more or less leafless. The leaves are twice ternate, chiefly radical, long-stalked. The leaflets are small, nearly rounded, bluish-green below, with blunt lobes. The flowers are few, in simple, terminal racemes, at first drooping, later erect. The ultimate flower-stalks are bent back in fruit. The purplish sepals are four. The stamens are pendulous, 18–20. The anthers are linear, apiculate. The capsule, an achene, is shortly stalked, curved, ribbed, tipped with the hooked style. The plant is 4–10 in. high, flowering in July and August, and is a herbaceous perennial.

Three-lobed Water Crowfoot (*Ranunculus tridentatus*, D.C.).—The habitat of this plant is marshes and ditches, S. and W. England, shallow pools, and the plant is very rare. The plant is floating. The submerged leaves are loosely 3-forked (hence *tripartitus*), the segments slender, collapsing to some extent, the floating leaves small, deeply divided nearly to the base into 3 (hence also *tripartitus*), the segments rounded, 2–5 lobed, the central one as long as the lateral. The stipules are round, the upper free. The flower-stalk is slender, as long as the leaf-stalks, bent back at length. The flowers are white, very small, the petals not longer than the calyx. The stamens are 5–8, the stigma tapering. The receptacle is small and round. The carpels are few, inversely egg-shaped, swollen, with a small hairless beak. The plant is floating, flowering between May and August, and is a herbaceous perennial.

Large Ivy-leaved Crowfoot (*Ranunculus Lenormandi*, F. Schultz).—The habitat of this plant is shallow ponds on mud, marshes and ditches, pools, and muddy places. The habit is prostrate, trailing. The stem floats or creeps on mud, and is stout, branched. There are no submerged leaves.

The aerial leaves are often opposite, kidney-shaped or rounded, heart-shaped, the 3–5 lobes deeply divided, widening from the base, very broad at the top, with 2–3 notches, not spotted, the lobes shallow, the base contracted. The stipules are broad, especially the upper, and large. The flowers are white, the petals twice as long as the calyx, oblong, narrow, inversely egg-shaped, 5-veined, distant. There are 8–10 stamens. The receptacle is not hairy. The style is terminal, central on the ovary. The achenes are numerous, hairless, unequally inversely egg-shaped, with a terminal point, the inner edge much rounded above, with slender, deciduous, nearly terminal style. The plant is creeping, or 4–12 in. long, flowering between June and August, and is a herbaceous perennial.

Lesser Spearwort (*Ranunculus flammula*, L.).—The habitat of this species is wet places. The plant is prostrate below, then ascending or creeping. The stems are sometimes rooting below. The leaves vary considerably, being hairy or not, egg-shaped or linear to lance-shaped, nearly entire or coarsely toothed, stalked, the lowest leaves stalked, the upper stalkless. The internodes are straight. The flowers are shining yellow. The flower-stalk is furrowed. The achenes are inversely egg-shaped, pitted, shortly beaked, the style small, awl-like, forming a small head. The plant is 4–18 in. high, flowering from June to October, and is a herbaceous perennial.

Adder's Tongue Crowfoot (*Ranunculus ophioglossifolius*, Vill.).—The habitat of this plant is wet places. The habit is prostrate below, then erect. The root is fibrous. The stem is branched, tapering below, many-flowered, erect, hollow, furrowed. The leaves are egg-shaped, lance-shaped, the lower long-stalked, egg-shaped or heart-shaped, the upper stalkless, clasping, oblong. The plant is hairless. The flowers are small, yellow, the petals little longer than the sepals. The flower-stalks are furrowed. While the flowers of *R. flammula* are $\frac{3}{4}$ in. in diameter, those of this species are $\frac{1}{2}$ in. The achenes are small, hairy, granulated, obliquely egg-shaped, margined, with

a short terminal point or style. The plant is 6–10 in. high, flowering between June and August, and is a herbaceous annual.

Creeping Marsh Marigold (*Caltha radicans*, Forst.).—The habitat of this species is wet sub-alpine spots. The habit is creeping, the plant rooting at the joints. It differs from the common form *C. palustris* in a few essentials. The radical leaves are triangular, acutely toothed, scalloped, small, obscurely 5-angled, blunt below, or kidney-shaped. The base of the leaf is nearly at right angles to the stalk. The sepals are not touching and are narrow. The height of the plant is 8–14 in. It flowers between April and July, and is a herbaceous perennial.

ORDER CRUCIFERÆ

Bitter Cress (*Cardamine flexuosa*, With.).—The habitat of this plant is moist shady places, swamps in woods. The habit is the rosette habit. The root is fibrous, oblique. The stem is wavy (hence the specific Latin name). There are few radical leaves, with lobes each side of a common stalk, the lower leaflets rounded, lobed, angled, toothed. The upper leaves have narrower lobes. There are no stipules. The flowers are white, with small erect petals, twice as long as the calyx. There are 6 stamens. The style is slender, long. The flower-stalks are at right angles, the pods erect. The plant is 6–12 in. in height. It flowers from April to September. It is perennial or biennial, or according to some annual, according to situation.

ORDER VIOLACEÆ

Bog Violet (*Viola palustris*, L.).—The habitat of this plant is wet and boggy places, swamps, and bogs. The habit is the loose rosette habit. The rootstock is stoloniferous, the stolons underground, rooting, with stipules and leaves at the nodes. The stipules are egg-shaped to lance-shaped, membranous, with glandular teeth. The leaves are few, heart-shaped to kidney-shaped, entire, hairless, or rarely hairy. The flowers are few, scentless, pale or dark lilac, with dark branching veins. The sepals are oval, blunt, with membranous borders. The spur is flat, blunt, longer than the calyx appendages. The anther-spurs are curved, short, and thick. The stigma is flattened. The capsule is hairless, nodding. The fruit-stalk is erect. The plant is 3–6 in. high, flowering from April to July, and is a herbaceous perennial.

Haller's Dog Violet (*Viola stagnina*, Kit.).—The habitat of this plant is bogs, fens, turf bogs. The habit is the loose rosette habit, soboliferous. The rootstock is creeping, horizontally, with distinct plants at the internodes, suberect, and branched. The lower stipules are brown, narrow, nearly entire, the middle ones green, lance-shaped, toothed or nearly entire, not half as long as the stalks, the upper shorter, narrower, long-pointed. The lower leaves are oblong to lance-shaped, more or less heart-shaped, blunt below, the leaf-

stalks often irregularly winged above, longer than the blades, the middle with blades longer than the leaf-stalks, the upper narrowed to an acute blunt apex, pale-green, hairless, cut or toothed. The flowers are small, blue or nearly white, round in outline, the sepals egg-shaped to awl-shaped, with a white margin, the bracts slender near the curvature of the spur. The spur is green, little longer than the calycine appendages, the anther spurs short, curved, nearly as broad as long. The capsule is hairless, egg-shaped, acute, bluntly 3-angled. The plant is 2–6 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER CARYOPHYLLACEÆ

Glaucous Stitchwort (*Stellaria palustris*, Retz. = *S. glauca*, With.).—The habitat of this plant is marshy places. The habit is grass-like. The stem is erect, weak, smooth, angular, the whole plant bluish-green (hence *glauca*), hairless, 4-angled. The leaves are narrow, stalkless, with even borders, linear-oblong to lance-shaped, acute, the lower broader. The flowers are few, distant, white, solitary, or in a loose, panicled cyme, or in the axils. The bracts are membranous. The petals are notched or divided into two, with linear segments, longer than the 3-nerved, lance-shaped sepals. The sepals are acute, with a broad membranous margin. The capsule is oblong to egg-shaped, as long as the calyx. The plant is 1–2 ft. high, flowering from May to August, and is a herbaceous perennial.

ORDER HYPERICACEÆ

St. John's Wort (*Hypericum undulatum*, Schousb.).—The habitat of this plant is bogs. The habit is erect. The stem is slender, branched, 4-edged. The leaves are oblong, wavy at the edge (hence *undulatum*), bent down, with numerous transparent dots, netted with transparent veins (as are the stem edges and sepals), with black dots on the margins below, the dots numerous and uniform. The flowers are yellow, in loose, much-branched cymes. The sepals are erect, egg-shaped to lance-shaped, acute, with blunt scallops, glandular, with a long, fine point. The petals are narrow, tinged on the outside on one longitudinal half with red. The anthers have a black spot. The styles are half as long as the sepals, spreading, not half as long as the capsule. The carpels have many vittæ. The plant is 2–3 ft. high, flowering in July and August, and is a herbaceous perennial.

Bog St. John's Wort (*Hypericum elodes*, L.).—The habitat of this plant is spongy bogs, wet moors, and ditches. The habit is ascending or creeping. The plant is shaggy, rooting below. The stems are round, creeping, numerous, prostrate below, then ascending, leafy. The leaves are round to egg-shaped, or oblong to heart-shaped, stalkless, shaggy, half-clasping, with small pellucid to dotted glands. The flowers are pale-yellow, in few-flowered terminal and axillary

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cymes, irregular, divided into 3 repeatedly. The bracts are small, triangular, with glands at the teeth. The sepals are nearly equal, hairless, oblong, blunt, fringed, short-stalked, with reddish glands. The petals are equal-sided, egg-shaped, entire. The styles are 3, and nearly as long as the capsule. The stamens are in three sets, with a scale between, united in the lower half. The plant is 3-12 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER LEGUMINOSÆ

Blue Marsh Vetchling (*Lathyrus palustris*, L.).—The habitat of this plant is boggy meadows and copes, fens and marshes. The habit is climbing or trailing. The rootstock is creeping. The stem has herbaceous wings. The leaflets are in 2 or 3 pairs, linear-lance-shaped, acute, the leaf-stalks with 2 or more pairs, and a short, branched tendril, sword-shaped, with parallel nerves. The stipules are lance-shaped, half arrow-shaped. The flower-stalk is long, many- (2-6) flowered, longer than the leaves. The ultimate stalk is longer than the calyx-tube. The pod is stalked, linear-lance-shaped, flattened, hairless, netted, 6-8-seeded. The plant is 1-4 ft. high, flowering between June and August, and is a herbaceous perennial.

ORDER ROSACEÆ

Cloudberry (*Rubus Chamaemorus*, L.).—The habitat of this plant is turfy mountain bogs. The stem is subterranean, with a woody rhizome, with no barren stems. The leaves are simple, kidney-shaped, 5-lobed, the lobes blunt, scalloped, toothed, plaited. The flowering shoot is erect, unarmed, 1-flowered. The stipules are broad and scale-like. The solitary flowers are large, white. The fruit is large, the drupelets red, then orange. The plant flowers in June, and is a herbaceous perennial.

Marsh Septfoil (*Potentilla palustris*, Scop. = *P. Comarum*, Nestl. = *Comarum palustre*, L.).—The habitat of this plant is bogs and marshes and peaty bogs. The habit is ascending. The stem is purplish-brown. The rootstock is long and woody, with fibrous roots. The plant is sparingly hairy. The leaves are pinnate, with 5-7 leaflets, which are elliptic-oblong, lance-shaped, acute, blunt, toothed, sparingly hairy, pale below. The stipules are large, membranous, cut. The flowers are few, dark-purple, purple within. The receptacle is enlarged, spongy. The bracteoles are not so large as the egg-shaped, lance-shaped, long-pointed sepals, purplish. The petals are smaller. The achenes are numerous, hairless. The plant is 6 in. to 2 ft. high, flowering between May and July, and is in fruit in September, being a herbaceous perennial.

ORDER SAXIFRAGACEÆ

Yellow Musk Saxifrage (*Saxifraga Hirculus*, L.).—The habitat of this plant is bogs and wet moors. The plant has the rosette habit. The

stem is more or less simple, erect, stoloniferous, leafy, downy above, branched from the base, the barren shoots prostrate, slender. The leaves are alternate, flat, entire. The radical leaves form a rosette, and are stalked, lance-shaped or spoon-shaped, the stem-leaves linear, slightly toothed. The flowers are yellow, dotted with red, more or less solitary or few, terminal. The sepals are free, bent back, blunt, fringed at the border. The petals are blunt, with 2 hard points near the base, inversely egg-shaped. The capsule is superior, with short, spreading beaks. The plant is 4-8 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER CRASSULACEÆ

Hairy Stonecrop (*Sedum villosum*, L.).—The habitat of this plant is wet mountain pastures, alpine bogs, and marshes. The plant has the cushion or mat habit. The plant is glandular, downy. The root is small and weak. The stems form a tuft of leaves the first year, lengthen in the second, and are then slender and flowering. They are erect. The leaves are linear, stalkless, semi-cylindrical, alternate, flat above, blunt, not spurred or produced at the base, scattered. The flowers are white or purple, in a sort of scorpioid cyme, few, the sepals egg-shaped, blunt, the petals egg-shaped, acute, rose-colour, with a purple streak. The seedlings form a rosette. The plant is 3-4 in. high, flowering in June and July, and is a herbaceous perennial.

ORDER DROSERACEÆ

Sundew (*Drosera intermedia*, Hayne = *D. longifolia*, L.).—The habitat of this plant is bogs and moist heaths. The plant has the rosette habit. The stem is short and leafy. The leaves are oblong, spoon-shaped, erect, or inversely egg-shaped, blunt, the leaf-stalks are hairless. The scapes rise from the base of the rosette, and are curved below. The rachis is not closely bent-back. The flowers are white, with 5-8 segments. The capsule is pear-shaped, equaling the sepals. The seeds are egg-shaped, rough. The plant is 2-4 in. high, flowering in July and August. It is a herbaceous perennial.

Long-leaved Sundew (*Drosera anglica*, Huds.).—The habitat of this species is wet moors and bogs. The habit is as in the last. It is a larger and taller plant. The leaves are nearly erect, inversely egg-shaped, lance-shaped, linear to spoon-shaped, blunt, the foot-stalk hairless. The scapes rise from the centre of the rosette. The flowers are white, with 5-8 segments. The capsule is inversely egg-shaped, longer than the sepals. The seed has a loose, chaffy coat. The plant is 4-8 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER ONAGRACEÆ

Ludwigia palustris, Ell. (= *Isnardia palustris*, L. = *L. apetala*, Walt.).—The habitat of this plant is

pools, and peaty streams and pools. The habit is prostrate then ascending, or floating. The stems root at the nodes, and are 4-angled, branched, hairless, often reddish. The leaves are opposite, elliptic, egg-shaped, acute, narrowed to the leaf-stalk, shining. The flowers are small, green, often apetalous, stalkless, in the axils, the parts in fours, the lobes triangular, acute. The bracts are awl-like. The style is short, the stigma large, pin-headed. The capsule is egg-shaped, blunt, 4-sided, with the persistent calyx spreading horizontally. The seeds are angular. The plant is 6-10 in. in height, flowering in June and July, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

White Rot (*Hydrocotyle vulgaris*, L.)—The habitat of this plant is marshes and bogs. The habit is prostrate. The stem is creeping or floating, white. The leaves are shield-shaped (hence *Hydrocotyle*), rounded, scalloped, glossy, 9-veined. The leaf-stalk is hairy, exceeding the flower-stalks. The flowers are small, purplish-green, stalkless (like the fruit, which is seldom produced), forming a head. The umbels or heads are simple, proliferous in the centre, with a second head, 5-flowered, notched below, axillary. The bracts are very small, triangular, hollow. The fruit is small, the carpels having resinous points, purplish dots with 2 ridges on each face. The styles are slender on a flattened disk. The plant is creeping, flowering from May to August, and is a herbaceous perennial.

Procumbent Marshwort (*Apium nodiflorum*, Reichb.)—The habitat of this species is ditch-banks and brooks, marshy, watery places. The plant is prostrate in habit, then erect. The stem is rooting at the base, and slender. The leaves are pinnate, or trifoliolate. The leaflets are stalkless, egg-shaped, lance-shaped, oblong, unequally bluntly toothed, or lobed. The flowers are small, white, in more or less stalkless or stalked umbels, with leaves opposite, longer than the flower-stalks, with a partial involucre of several leaves. The rays are unequal. The bracteoles are numerous, oblong, with a membranous margin. There are no bracts, or 1-2. The general involucre of 1-3 leaflets soon falls. The fruit is small. The styles are short, spreading. The plant is 1-3 ft. in height, and flowers in July and August, being a herbaceous perennial.

Marsh Dropwort (*Cœnanthe Lachenalii*, Gmel.)—The habitat of this plant is marshes, fresh and salt. The habit is erect. The root fibres are not tuberous, but club-shaped, fleshy (tapering at both ends), cylindrical. The stem is slightly branched. The radical leaves are bi-pinnate, soon disappearing, the segments are bluntly lobed, oblong, wedge-shaped, the leaflets 2-3 lobed, the lower stem-leaves are 2-3 times pinnate, the leaflets linear, acute, the upper leaves are pinnate. The flowers are white. The partial umbels are loose, spherical, distinct. The general involucre consists of many leaves, and is sometimes want-

ing. The partial involucre consists of many leaves not so long as the barren florets. The outer florets are long-stalked, barren as a rule. The inner are more or less stalkless, fertile. The petals, radiant, are inversely heart-shaped, round, with a short, narrow stalk, divided to the middle. The fruit is oblong, not corky below, rounded above, inversely egg-shaped, rounded and narrowed above. The styles are short and slender, as are the ultimate flower-stalks. The plant is 1-4 ft. high, flowering from July to September, and is a herbaceous perennial.

Hemlock Water Dropwort (*Cœnanthe crocata*, L.)—The habitat of this species is marshes and ditches. The habit is erect. The rootstock consists of large spindle-shaped tubers. The juice is yellow or colourless. The leaves are large, triangular. The stem is much branched, 3-4 times pinnate, the radical leaves 2-3 pinnate, the stem-leaves deeply divided to the base. The leaflets are broad, stalked, wedge-shaped, 2-3 lobed, oblong, round, cut, the lobes of the upper leaves not so broad. The leaf-stalks are sheathing, large. The flowers are white, in numerous large umbels with many rays. The bracts and bracteoles are numerous or wanting. The involucral leaves vary in number and shape. The fruit is entire, narrow, oblong, more or less cylindrical, furrowed, longer than the fruit-stalk, which is not thickened. The plant is 2-5 ft. high, flowering in July and August, and is a herbaceous perennial.

Milky Parsley (*Peucedanum palustre*, Moench).—The habitat of this species is marshes and fenny places. The habit is erect. The stem is hollow, round in section, grooved. The leaves are tri-pinnate, triangular. The leaflets are divided to the base, stalked, the segments narrow, lance-shaped to linear, with a long point. The flowers are white, small, in compound umbels, stony and rough, with many rays. The general involucre consists of numerous persistent bracts, lance-shaped, bent down. The fruit is broadly oblong, with thick, narrow wings, the stripes of the commissure being furrowed. The styles are very short. The plant is 3-5 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER RUBIACEÆ

Rough Swamp Bedstraw (*Galium uliginosum*, L.)—The habitat of this species is marshes and ditches, bogs and wet places. The plant is erect or ascending in habit. The stem is rough, prickly. When dry it does not turn black, but remains green. The stem is slender, brittle, and weak, with the bristles turned-back. The leaves are 6-8 in a whorl, or rarely four, narrower than in *G. palustre*, more rigid, with a blunt point, linear to lance-shaped, with a bristle point, the margins rough. The flowers are white, few, in a small axillary cyme, on erect flower-stalks. The branches of the cyme are 3-fid, spreading. The fruit is granular, dark-brown, on erect stalks. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

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ORDER COMPOSITÆ

Fen Ragwort (*Senecio paludosos*, L.).—The habitat of this plant is fen ditches. The habit is the rosette habit more or less. The rootstock is short. The stem is erect, hollow, woolly, slightly cottony, branched above, leafy, straight. The leaves are stalkless, undivided, cottony below, narrow, oblong, lance-shaped, tapering, coarsely and sharply toothed. The flowerheads are yellow with spreading rays, on long stalks, with bracts in loose, spreading, simple or compound, terminal corymbs, the rays consisting of 13-16 narrow florets. The involucre is broadly bell-shaped, the outer phyllaries awl-like, long, the inner blunt. The fruit is hairless. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Marsh Fleawort (*Senecio palustris*, Hook.).—The habitat of this plant is fen ditches in the E. counties. The habit is as in the last. The stem is stout, erect, tall, downy or woolly, hollow, leafy, much branched, corymb-like above. The leaves are undivided, or nearly entire, half-clasping, oblong to broadly lance-shaped, the lower wavy, toothed, blunt or acute. The flowerheads are pale, bright-yellow, erect, numerous, crowded in compound corymbs, broadly bell-shaped, short like the stalk, hairy. The heads have spreading rays. There are no scales below in the involucle. The bracts are slender and numerous. The ray-florets are short. The fruit is ribbed without hairs. The plant is 2-4 ft. high, flowering in June and July, and is a herbaceous biennial.

Meadow Thistle (*Cnicus pratensis*, Huds. = *Cirsium anglicum*, D.C. = *Cirsium britannicum*, Scop.).—The habitat of this plant is wet or boggy meadows, marshes and bogs. The habit is erect, more or less of the rosette type. The plant is cottony. The roots are fibrous. The stem is simple, without wings, round in section, leafless above, a few scaly bracts springing from the creeping rhizome. The leaves are soft, broad, lance-shaped, with wavy teeth, fringed with bristles, or more or less divided, or 2-3 fid. The lower leaves are long-stalked, the lobes being angular, and the upper are half-clasping, auricled. The flower-heads are usually solitary, or 2-3, cottony. The florets are dark-purple. The involucre is cottony, hemispherical, with lance-shaped, closely-pressed bracts, with long, spinous points, the outer blunted-pointed, the inner slender, purple, narrow-pointed. The fruit is pale, slender, smooth, with a dirty-white pappus. The plant is 10-18 in. in height, flowering from June to August, and is a herbaceous perennial.

Taraxacum palustre, D.C. (= *T. paludosum*, Sch.).—The habitat of this species is moist moorlands, damp places. In this plant, which has the rosette habit, the leaves are dull-green, runcinate, deeply divided, with wavy teeth, the lobes broad. The outer phyllaries are ovate to long-pointed, closely pressed, spreading or erect, the inner simple at the tip. The fruit is pale-yellow or brown, muricate at the top. The plant is 4-12 in.

in height, flowering between June and September. It is a herbaceous perennial.

Marsh Sow Thistle (*Sonchus palustris*, L.).—The habitat of this plant is marshes. The habit is erect. The rootstock is branched. The stems are simple, stout, hollow, angled, leafy. The leaves are long, linear to lance-shaped, acutely arrow-shaped, with a long, narrow point, finely toothed, the lower leaves long, with 2-4 linear-lance-shaped lobes, runcinate, with the lobes bent backwards, or with one arrow-shaped blade and a broad winged leaf-stalk, bluish-green below. The upper leaves are entire, arrow-shaped, stalkless, with acute auricles. The flowerheads are pale lemon, in a sort of umbel, glandular, hairy, with a stout, hairy, glandular stalk. The fruit has 4 rough ribs, and is pale. The plant is 5-9 ft. high, and flowers between July and September, being a herbaceous perennial.

ORDER CAMPANULACEÆ

Ivy-leaved Bellflower (*Wahlenbergia hederacea*, Sch.).—The habitat of this plant is moist woods and turf-y places, bogs and damp places, damp peaty places in the S. and W. The habit is prostrate. The stem is graceful, branched, slender, the rootstock creeping, the whole plant hairless. The leaves are membranous, alternate, stalked, heart-shaped or rounded, more or less acutely 5-lobed, or angled, ivy-shaped (hence *hederacea*), the upper sometimes opposite, the flower-stalk slender. The flowers are pale-blue, with dark veins, bell-shaped, nodding then erect, narrow, the corolla cylindric, with short, blunt lobes, bent back. The calyx-tube is shortly conical, with triangular to awl-shaped erect lobes. The flower-stalks are longer than the leaf-stalks and leaves, solitary. The fruit is nearly round, and is a membranous capsule opening within the calyx-lobes. The plant is creeping, and flowers in July and August, being a herbaceous perennial.

ORDER VACCINIACEÆ

Great Whortleberry (*Vaccinium uliginosum*, L.).—The habitat of this plant is mountain bogs and copses. The plant has the undershrub habit. The stem is rigid, round in section, prostrate, then ascending, woody, naked below, the branches ascending, round in section. The leaves are tough, deciduous, oblong, inversely egg-shaped, entire, blunt or acute, bluish-green below, with netlike veins below. The flowers are egg-shaped, pink or flesh-colour. The calyx-tube is hemispheric, with 4-5 blunt, broad lobes. The flower-stalk bears one flower. The corolla is more or less globular. The anthers have dorsal awns or processes. The berry is black, with a milky bloom. The plant is 6-18 in. high, flowering in May and June, and is a perennial undershrub.

ORDER PRIMULACEÆ

Bird's Eye Primrose (*Primula farinosa*, L.).—The habitat of this plant is bogs and meadows,

moist pastures, in the N. of England and S. of Scotland. The plant has the rosette habit. The leaves are green above, not wrinkled, very mealy below, mealy white or yellow (hence *farinosa*), with a waxy secretion which prevents the stomata from being clogged, inversely egg-shaped to spoon-shaped, lance-shaped, scalloped, blunt or acute, without hairs above. The flowers are in an umbel, borne on a scape or not (rarely), pale-lilac, with a yellow centre, but vary, and are erect or spreading, crowded. The lobes of the calyx are longer than the tube, not so long as the corolla-tube, linear. The calyx is inversely egg-shaped to acute, mealy. The lobes of the corolla are far apart, flat, inversely egg-shaped, wedge-shaped, rounded below, divided into 2 nearly to the base. The limb is flat, the lobes are as long as the tube, and the tube has folds in the throat, with a narrow mouth. The capsule is twice as long as the tube, cylindrical to oblong. The stigma is pin-headed. The plant is 2-9 in. high, flowering in June and July, and is a herbaceous perennial.

Highland Primrose (*Primula scotica*, Hook.).—The habitat of this species is sandy heaths, turf places near the coast, and pastures. The plant resembles *P. farinosa* in habit (q.v.). The leaves are inversely egg-shaped to lance-shaped, green above, mealy below. The flowers are in umbels, bluish-purple, with a yellow centre. The calyx is swollen, the teeth short, egg-shaped, blunt, as long as the tube, shorter than the corolla-tube. The corolla-lobes are inversely heart-shaped, close, concealing half the tube, the limb flat. The stigma has 5 points. The ovary is rounded. The capsule is scarcely longer than the calyx, oblong. The plant is 1-4 in., flowering from May to September, and is a herbaceous perennial. The flowers are homomorphic. Pollination is otherwise as in *P. vulgaris*. The seeds are blown out of the capsule, open above, by the wind.

Tufted Loosestrife (*Lysimachia thyrsiflora*, L.).—The habitat of this plant is marshes in the N. of Britain and canal-banks. The habit is erect. The rootstock is creeping, the plant stoloniferous. The stem is simple and stout. The leaves are opposite, rarely in whorls, stalkless, lance-shaped, the lower not so large, the upper larger, with black dots. The flowers are small, yellow, in dense racemes, in the lower axils, cylindric, on long stalks more or less erect. The ultimate flower-stalks are as long as the calyx. The lobes are linear, dotted. The corolla is bell-shaped, divided nearly to the base into 5 narrow segments, with very small teeth between. Both calyx and corolla bear orange spots. The anther-stalks, which are combined below, form a ring, and project, as does the style. The capsule is egg-shaped, 5-valved. The plant is 1-3 ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER BORAGINACEÆ

Creeping Forget-me-not (*Myosotis repens*, Don).—The habitat of this species is boggy places. The habit is prostrate. The stolons are not sub-

terranean. The stem is somewhat angular, with spreading hairs. The leaves are rather acute. The flowers are pale-blue, in a somewhat leafy raceme, with 1-4 leaves below. The limb of the corolla is flat and longer than the tube, the lobes slightly notched. The calyx is divided half-way down, with closely pressed hairs, and in fruit is open, the teeth narrow, lance-shaped, acute, and exceeding the corolla-tube. The style is not so long as the calyx. The 4 nutlets are small. The plant is creeping, flowering between June and August, and is a herbaceous perennial.

ORDER LENTIBULARIACEÆ

Irish Butterwort (*Pinguicula grandiflora*, Lam.).

—The habitat of this plant is bogs. The habit is the rosette habit. Regarded formerly as a subspecies of *P. vulgaris*, it has broader, larger leaves, and more oblong, inversely egg-shaped, rounded, contiguous calyx-lobes, with a rounded tip. The flowers are larger (hence *grandiflora*), violet-veined, the lobes of the lower lip very broad, overlapping. The spur is often divided into two nearly to the base, awl-like, conical to cylindrical, shorter than the corolla, as long as the calyx-lobes. The spur varies in length. The capsule is egg-shaped or rounded, rounded at the extremity. The plant is 4-6 in. high, flowering in May and June, and is a herbaceous perennial.

Western Butterwort (*Pinguicula lusitanica*, L.).—The habitat of this plant is bogs. The plant has the rosette habit, and is devoid of hairs except the scape. The radical leaves are oblong, shortly stalked, succulent, thin, blunt. The flowers are pale-pink or lilac, pale-yellowish in the throat, borne on slender, downy scapes. The short broad lobes of the corolla are equal, the lower pouched. The spur is broad, blunt, short, and conical or cylindrical, bent inwards, not so long as the corolla. The calyx-lobes are rounded. The capsule is more or less round. There are 2 cotyledons (1 in *P. vulgaris*). The plant is 2-4 in. high, flowering between June and October, and is a herbaceous perennial.

Alpine Butterwort (*Pinguicula alpina*, L.).—The habitat of this species is bogs. The plant has the rosette habit. It resembles the last, but is larger, and the scapes are not so long. The flowers are small, white, with a hairy, yellow throat, and the lobes of the corolla are unequal, the lower lip longer than the upper. The spur is conical, not so long as the corolla, broader and blunter, curved towards the lower lip. The calyx-lobes are broadly egg-shaped, blunt. The capsule is egg-shaped, acute. The plant is 2-4 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER LABIATE

Mentha gentilis, L.—The habitat of this plant is marshes. The stem is hairy. The leaves are spreading, thick, ovate, acute, coarsely toothed, with a few hairs above, and more on the veins below. The upper leaves are the same. The

BRITISH FLORA

flowers are lilac, the calyx teeth densely hairy. The lower part of the calyx and corolla are smooth, as are the ultimate flower-stalks. The bracts are all leafy, the uppermost with no flowers. The plant is 1-2 ft. in height, flowering from August to October, and the plant is a herbaceous perennial.

Water Germander (*Teucrium Scordium*, L.).—The habitat of this plant is wet meadows and marshes. The habit is erect, or prostrate below, the stem hairy, much branched from the base. The leaves are oblong, without stalks, toothed, green on each side. The corolla is purple, the flowers being borne in whorls in the axils. The teeth of the calyx are short and equal. The bracts resemble the leaves. The lower lip of the corolla is spotted. The plant is 4-24 in. in height. The period of flowering is from July to October. It is a herbaceous perennial.

ORDER POLYGONACEÆ

Small Persicaria (*Polygonum minus*, Huds.).—The habitat of this plant is wet, gravelly places, marshy places. The habit is prostrate, then ascending. The stem is spreading, much branched, slender. The leaves are narrow, lance-shaped, linear, fringed with hairs, not glandular, the ocreæ or stipules close, short, not inflated, fringed with hairs, glandless. The flowers are in greenish-pink, erect or ascending, slender, loose, straight, solitary racemes or spikes, on slender stalks. The outer perianth-segments are glandular at the base only. The styles are 2-3, united half-way. The fruit, a nut, is smooth, shining, small, plano-convex, or 3-angled, flattened, as long as the outer perianth. The plant is 6-18 in. high, flowering in August and September, and is a herbaceous annual.

Yellow Marsh Dock (*Rumex palustris*, Sm. = *R. limosus*, Thuill. = *R. maritimus* × *conglomeratus*).—The habitat of this plant is marshes (hence *palustris*). The habit is erect. The radical leaves are narrowly lance-shaped, rounded, or run down the stem below, the stem-leaves are linear, lance-shaped, narrow below. The flowers are numerous, in distant, distinct, leafy whorls, yellowish-green. The outer perianth-segments are egg-shaped, oblong, with 2-3 short, bristle-like teeth, not so long as the inner perianth-segments, with a lance-shaped, entire point, and a prominent, narrow, oblong tubercle. The fruit is larger (2-3 times) than in *R. maritimus*. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER AMENTACEÆ

Alder (*Alnus glutinosa*, Gaertn. = *A. rotundifolia*, Mill.).—The habitat of this plant is river-banks, marshes, stream-sides, moist places. The Alder has the tree habit. The trunk and branches are crooked. It is a bush or tree 20-40 or 70 ft. in height, with a trunk 1-2 ft. in diameter. The bark is black, the wood white, turning red, then pink. The leaves are shortly-stalked, glutinous, downy in the axils of veins below, hairy when

young, wavy, coarsely-toothed, inversely ovate or rounded to wedge-shaped, green both sides. The stipules are ovate. The male flowers are in long, pendent catkins, which appear before the leaves, with red, round bracts; the female flowers are in short, racemose spikes, terminal, oblong or ovoid, blunt, with reddish-brown woody bracts. The fruit is pale, scarcely winged. The Alder is fairly tall, flowering in March and April, and is a deciduous tree.

Dwarf Birch (*Betula nana*, L.).—The habitat of this plant is Scotch bogs, turf-y places, mountains. The plant has the shrub or bush habit, prostrate, then ascending. The leaves are small, round, scalloped, hairless, shortly-stalked, blunt, dark-green. The catkins are compound inflorescences a quarter as large as in *B. alba* (q.v.), the scales of the female catkins digitate to 3-fid, inversely wedge-shaped, with equal, rounded lobes, small, nearly stalkless. The fruit has a narrow, membranous border, and is round. The plant is 1-2 ft. high, flowering in May, and is a perennial shrub.

Almond-leaved Willow (*Salix triandra*, L.).—The habitat of this willow is river-banks, osier beds, wet woods. The plant has the willow habit. The bark is flaky. The leaves are linear-oblong, lance-shaped, smooth, acute, coarsely-toothed, narrowed to the base, paler below. The stipules are half heart-shaped, blunt. The catkins are slender, oblong, ovate, stalked, and appear with the leaves. The female catkins are narrower. The disk of the male flower is 2-glandular. There are 3 stamens (hence *triandra*). The stigma is more or less stalkless, with a thick short style. The scales are persistent, smooth. The ovary is not furrowed. The capsule is small, round, smooth. The height reached is 20 ft. This species flowers in April and May, and is a deciduous tree.

Osier (*Salix viminalis*, L.).—The habitat of this plant is wet places, osier beds. The Osier has the shrub or tree habit, with long, slender, straight, wand-like branches, when young silky, polished and leafy when older. The leaves are linear to lance-shaped, with a long point, narrowed into a stalk, shining, netted above, bluish-green or silvery and silky below, the entire or obscurely-scalloped margin rolled back. The stipules are small, linear to lance-shaped. The catkins are stalkless, lance-shaped, long, and appear before the leaves, being golden-yellow. The scales are oblong, brown, and blunt. There are small bracts, or none. The style is long, linear, and entire. The stigmas are entire. The capsule is shortly-stalked, downy, with a broad base, white, lance-shaped or awl-like. The Osier reaches a height of 30 ft. The flowers bloom from April to June. The tree is deciduous and perennial.

Purple Osier (*Salix purpurea*, L.).—The habitat of this plant is river-banks, osier beds, marshes. The habit is erect or prostrate, with tough, slender twigs. The bark is red or purple. The leaves are sometimes more or less opposite, thin, linear to lance-shaped, long-pointed, narrow above and below, glandular, coarsely-toothed, bluish-green,

black when dry, when young slightly hairy, shortly-stalked, broadest just below the middle. There are no stipules. The catkins are oval, cylindrical, stalkless, opposite or alternate, erect, then spreading or bent back. The fertile catkins are compact. The scales are small and purple. The anther is purple. The stigma is oval, with a very short style. The capsule is ovoid and blunt. The Purple Osier is 5-20 ft. high, flowering in March and April. It is a deciduous perennial.

Salix acuminata, Sm.—The habitat of this plant is hedges and damp woods, osier beds. It has been regarded as a variety of *S. viminalis*. The buds are downy. The leaves are lance-shaped to oblong, bluish-green, pointed, ash-colour, and downy or hardly silky below, finely-toothed. The stipules are half heart-shaped. The capsule is ovate, tapering. The stigmas are oval, entire, with a large style. This species grows to a height of 25-30 ft. It flowers in April, and is a deciduous shrub or tree.

ORDER ORCHIDACEÆ

Bog Orchis (*Malaxis paludosa*, Sm.).—The habitat of this plant is spongy bogs and Sphagnum swamps. The habit is the orchid habit. The plant is an epiphyte. The stem is 5-angled, swollen, sheathed, with white scales below, which give rise to a new plant. The leaves are few, fringed with cellular bulbils giving rise to new plants, and leaves put in the ground serve the same end. They are 3-5, inversely egg-shaped, oval, blunt, concave. The flowers are numerous, in a long raceme, with small bracts, on twisted, ultimate stalks, and are yellowish-green. The sepals are egg-shaped, spreading, 2, turned upwards. The petals are linear to oblong, bent backwards, the lip is superior, as long as the petals, 3-veined, erect, acute, concave, embracing the column below. The plant is 1-4 in. high, flowering between July and September, and is a herbaceous perennial.

Fen Orchis (*Liparis Loeselii*, Rich.).—The habitat of this plant is spongy bogs. The plant has the orchid habit, and is an epiphyte on Sphagnum. The stem is 5-angled, leafless above, swollen, sheathed with scales below, with a large, egg-shaped bulb below. The leaves are oblong to lance-shaped, keeled, elliptic, acute, stalked. The flowers are pale-yellowish-green, ascending, in a loose spike. The sepals are lance-shaped. The petals are linear, the lip oblong to inversely egg-shaped, blunt-pointed. The bracts are small. The plant is 4-8 in. high, flowering in June and July, and is a herbaceous perennial.

Coral-root (*Corallorrhiza innata*, Br. = *C. trifida*, Chat.).—The habitat of this plant provides leaf-mould on which it lives. There are no true roots. The rhizome consists of short, fleshy, thick, whitish branches, coral-like (hence *corallorrhiza*). Mycorrhiza, a fungus attached to the rhizome, does the duty of root-hairs, converting the nutriment in the humus to the use of the plant. The plant is a saprophyte. The stems are slender. The sheaths

are loose, reddish-brown. The leaves are brown, lance-shaped. The flowers are 4-8, yellow, in a loose spike, on short stalks. The lip is oblong, white, with a few purple spots or tubercles, with 3 equal lobes. The sepals and petals are lance-shaped, egg-shaped, acute. The sepals are olive-green, the lateral bent down. The petals are narrower. The spur is short, or there may not be one. The plant is 6-12 in. high, flowering between June and August, and is a herbaceous perennial.

Large-flowered Ladies' Tresses (*Spiranthes festivalis*, Rich.).—The habitat of this orchid is bogs. The plant has the orchid habit. The stem is devoid of hairs. The tubers are several, cylindrical. The radical leaves are linear-oblong, narrow, lance-shaped. The flowers are white, in a spiral series, all one side, in a loose, slender spike, many-flowered, downy, with a large lip. The column and lid are acute. The intermediate processes are lance-shaped, acute. The plant is 6-18 in. high, and is in flower in July and August, being a herbaceous perennial.

Irish Lady's Tresses (*Spiranthes romanzoffiana*, Cham.).—The habitat of this species is boggy places. The habit is erect. The tubers are cylindrical. The stem is thick, smooth, with numerous bracts or leaves, the lower lance-shaped, narrow. The spike is dense, downy and glandular, with flowers in 3 series or rows. The sepals and petals are equal, the lateral sepals united at the base. The flowers are fragrant, white, the lip tongue-shaped, and narrowed below the tip, which is bent back and scalloped. The plant is 6-10 in. in height. The flowers are found in August and September. It is a herbaceous perennial.

Loose-flowered Orchid (*Orchis laxiflora*, Lam.).—The habitat of this plant is wet meadows and bogs, marshes, ballast heaps at Hartlepool. The plant has the erect orchid habit. The 2 tubers are round, not divided. The stem is round, grooved, the leaves are lance-shaped, unspotted, with a long point. The flowers are bright-reddish-purple, in a loose spike. The bracts are 3-veined, and coloured, as long as the ovary. The sepals and petals are blunt. The lip is as broad as long, and the lateral sepals are turned back. The lip is 3-lobed, the lateral lobes turned back, large, scalloped, the middle lobe absent or shorter. The spur is blunt, half as long as the ovary. The plant is 1-3 ft. high. It flowers in May and June, and is a herbaceous perennial.

Orchis incarnata, L.—The habitat of this orchid is marshes. The habit is as in the last. The stem is hollow. The leaves are lance-shaped, acute, narrowed from a broad base, unspotted, approaching the stem, erect, the tip hooded, hollow. The bracts usually exceed the flowers. The flowers are larger, purplish to flesh-colour, the lip 3-lobed, the border turned down, scalloped, the spur awl-like, shorter than the ovary, the 2 lateral sepals spreading, the middle one and the petal meeting together. The plant is in flower in June and July, and is a herbaceous perennial.

Orchis praetermissa, Druce.—Differs in having the flowers pale flesh-colour, the lobes of the lip reflexed.

Marsh Orchis (*Orchis latifolia*, L.).—The habitat of this plant is marshy places, damp, moist meadows. The plant has the orchid habit. The tubers are palmate. The stem is usually hollow and leafy above. The leaves, with ring-shaped spots, are spreading, the lowest oblong, blunt, from a narrow base, broadest in the middle, lance-shaped, acute, not hooded, the tip flat. The bracts exceed the flowers and are 3-nerved, green. The flowers are in a dense spike, purple, the lip slightly 3-lobed, spotted with purple, the borders ultimately bent back, scalloped, the middle lobe the narrowest, the 2 lateral spreading. The spur is awl-like, straight or bent down, shorter than the ovary. The middle sepal and petal meet together. The plant is 9-30 in. high, and is in flower in June and July, being a herbaceous perennial.

ORDER IRIDACEÆ

Iris spuria, L.—The habitat of this plant is marshes. The plant has the Iris habit. The stem is round. The leaves are linear. The flowers vary in colour. The lamina is externally yellowish, white-veined, with a blue claw, furrowed, the inner segments and stigma violet. The capsule is blunt-pointed. The plant is 2-3 ft. high, flowering in June and July, and is a herbaceous perennial.

Blue-eyed Grass (*Sisyrinchium angustifolium*, Mill.).—The habitat of this species is damp, grassy places and bogs. The plant has the grass habit. The leaves are radical, grass-like, sword-shaped. The flowers are blue, in an umbel, on a 2-edged scape (with a flat, narrow wing) which is more or less simple and leafless. The spathe is 1-6-flowered, with equal lance-shaped valves, not so long as the flowers. The perianth-segments are blue inside, oblong, bluntly notched, erect, lance-shaped. The capsule is rounded, 3-angled. The plant is 6-12 in. high, flowering in July and August, and is a herbaceous perennial.

Yellow Sisyrinchium (*Sisyrinchium californicum*, Aiton).—The habitat of this species is marshes. The plant has the grass habit. The leaves are radical. The flowers are borne on simple, flattened scapes broadly winged and leafless, usually 2. The spathe is erect, the outer valve equaling the flower, sheathing, united at the base. The perianth is yellow, turning orange, with dark veins, and the segments are oval, narrow below. The capsule is ellipsoid, 3-angled. The plant is 6-18 in. high, flowering between July and September, and is a herbaceous perennial.

ORDER LILIACEÆ

Scottish Asphodel (*Tofieldia palustris*, Huds.).—The habitat of this species is mountain bogs and rills. The Scottish Asphodel has the grass habit. The rootstock is short and creeping. The stem is slender. The leaves are radical, linear, sword-shaped, in 2 rows, tufted. The flowers are pale-green in a short, dense raceme or spike, stalkless at first, then stalked, the scape naked, or 1-2 leaved, slender. The ultimate flower-stalks are

short, with membranous, 3-lobed bracteoles at the base. The perianth-segments are linear to oblong, blunt. The capsule is more or less round. The plant is 4-8 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER JUNCACEÆ

Toad Rush (*Juncus bufonius*, L.).—The habitat of this species is moist places, marshy places. The habit is the rush habit. The plant is very pale in colour. The stems are erect or ascending, with forked branches, leafy, slender, septate. The leaves are few, bristle-like, with only one leaf on the stem as a rule, and are channelled above, with short sheaths. The cyme is repeatedly forked, the flowers pale-green, arranged all one side, solitary, or distant, or clustered, stalkless, the branches short or long, and wavy. There may be 2-4 lateral, open, hexandrous flowers, the terminal ones cleistogamic and triandrous. The blunt membranous bracts are small. The perianth-segments are lance-shaped, longer than the capsule, unequal. The capsule is blunt, oblong, inversely ovoid, pale. The seeds are roundly oval. The plant is 4-8 in. in height, flowering in July and August, and is a herbaceous perennial.

Loose-flowered Rush (*Juncus effusus*, L.).—The habitat of this plant is marshy ground and moist places. The plant has the rush habit. It forms circular, densely-matted tufts. The stems are soft, green, with fine furrows. The leaves are reduced to sheaths, absent, or very small, and slender, at the top of the sheathing scales. The pith is continuous. The sheaths are dull brown, not inflated. The barren and fertile stems are awl-like. The flowers are in a loose compound or dense panicle. The perianth-segments are lance-shaped, longer than the capsule, olive-green. The anthers are oval, short, oblong, with 3 or 6 stamens. The capsule is inversely ovate, notched, not blunt-pointed. The seeds are very small and yellowish-brown. The plant is 1-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Common Rush (*Juncus conglomeratus*, L.).—The habitat of this plant is marshy ground, wet places. The plant has the rush habit. The stems are softly, finely-furrowed. The pith is continuous. The leaves, if any, are as in the last. The cymes are dense, more or less round. The perianth-segments are lance-shaped, tinged with brown, and longer than the capsule. There are 3 stamens. The anthers are long, linear. The capsule is mucronate, inversely ovate, notched. The plant is 1-3 ft. in height, flowering in July and August, and is a herbaceous perennial.

Lesser Jointed Rush (*Juncus bulbosus*, L. = *J. supinus*, Moench).—The habitat of this plant is bogs and wet places. The Lesser Jointed Rush has the rush habit. The rootstock is usually tuberous (hence *bulbosus*). The stem is slender, erect, prostrate or sometimes floating, round in section, with limp, straggly branches and obscure joints. The leaves are bristle-like, slender,

faintly-jointed within, somewhat channelled. The flowers are in nearly simple, terminal cymes, irregular, long, with few, distant, nearly erect clusters. The flowers are often viviparous. The perianth-segments are equal, acute, the inner 3 rather blunt, nearly as long as the capsule. The bracts are membranous, acute, nearly as long as the flower. There are 3 stamens, the anthers as long as their stalks. The capsule is oblong, pale-brown, very blunt, blunt-pointed. The plant is 3-10 in. high, flowering in July and August, and is a herbaceous perennial.

Three-flowered Rush (*Juncus triglumis*, L.).—The habitat of this plant is alpine bogs, boggy wet places on mountains. The plant has the rush habit. There are no stolons. The stems are tufted, black, round in section, slender, wiry, leafless. The radical leaves are awl-like, channelled, short, made up of two separate tubes. The sheaths are auricled. The leaflike bract is membranous, as long as, or shorter than, the flowers. The flowers are 2, or 3 (hence *triglumis*), terminal, erect, pale-brown in fruit. The perianth-segments are blunt, not so long as the capsule, elliptic to oblong. The capsule is egg-shaped to oblong, beaked, chestnut. The plant is 3-9 in. high, flowering in July and August, and is a herbaceous perennial.

Two-flowered Rush (*Juncus biglumis*, L.).—The habitat of this plant is wet places, boggy spots on mountains, and bogs. The plant has the rush habit. The root is fibrous. The stems are stoloniferous. The plant is not tufted. The stems are half-round in section, leafless, channelled one side, seldom more than one from each root. The leaves are radical, awl-like, flattened at the margin, not channelled, or made up of 2 tubes, septate within. The sheaths are not auricled. The flowers are usually 2 (hence *biglumis*), not as long as the bract, arranged one side, the upper stalked, not so long as the bract, the lower stalkless, chestnut-brown. The perianth-segments are blunt, as long as the capsule, or nearly so. The capsule is blunt-pointed between the lobes, notched, 3-lobed, conical, 3-angled, light-brown, with pale margins. The plant is 2-6 in. high, flowering in July and August, and is a herbaceous perennial.

Chestnut Rush (*Juncus castaneus*, Sm.).—The habitat of this plant is Scotch mountains, alpine bogs, micaceous mountain bogs at great elevations. The Chestnut Rush has the rush habit. The plant is not tufted and stoloniferous. The rootstock has loose stolons. The stems are round in section, leafy. The leaves are channelled, 2, half-round in section, hollow. The sheaths are not auricled, having thin walls. The flowers are bright-brown, in 2-3 cymes or solitary, lateral and terminal, 2-6 flowered. The leaflike bracts are longer than the flowers. The perianth-segments are acute, half as long as the capsule, elliptic to lance-shaped. The capsule is dark-brown, 3-angled, beaked, egg-shaped, oblong, pointed. The seeds are large. The plant is 4-16 in. high, flowering in July and August, and is a herbaceous perennial.

Small Marsh Rush (*Juncus compressus*, Jacq.).—The habitat of this rush is marshy places, damp places. The Small Marsh Rush has the rush habit. The plant is slender, with a creeping rootstock. The stems are tufted, slender, hollow, half-flattened at the margin with 1 leaf in the middle, or 1-2, erect, leafy below, more or less naked above. The leaves are linear, channelled above, slender, half-round in section, narrow, limp, more or less erect, as long as the stem, or shorter. The flowers are more or less solitary, in terminal, compound, compact, cymose panicles, not so long as the small pale bracts, with more or less erect branches, slender, and with few flowers. The perianth-segments are oval, oblong, blunt, as long as, or shorter than the capsule, pale in the middle, the margins broad, membranous, pale or dark-brown or purple. The anthers are oblong, and the style is half as long as the ovary. The capsule is roundly inversely egg-shaped, bluntly and shortly pointed. The plant is 12-20 in. high, flowering from June to August, and is a herbaceous perennial.

ORDER ALISMACEÆ

Echinodorus (*Alisma*) *ranunculoides*, Eng.—The habitat of this plant is lakesides, bogs and ditches, turf bogs. The plant has the rosette habit. The stems may be erect or creeping, tufted. The leaves are all radical, erect, linear to lance-shaped, acute, long-stalked, the blade 3-ribbed. The first leaves are submerged, floating, transparent. The flowers are pale-purple, in umbels or whorls, the flower-stalks or scapes bearing simple branches. The carpels form a head, and are 4-5-ribbed, swollen, angular, acute, egg-shaped, blunt-pointed. The styles are terminal. The plant is 6-18 in. high, flowering between June and August, and is a herbaceous perennial.

ORDER NAIADACEÆ

Marsh Arrow-grass (*Triglochin palustre*, L.).—The habitat of this plant is marshes. Marsh Arrow-grass has the grass habit. The plant is stoloniferous. The stem is swollen below. The leaves are slender, half-round in section, limp, faintly channelled above. The scape is slender. The flowers are in a long raceme, lengthening after flowering, on short stalks. The perianth is purple-bordered. The anthers are purple. The fruit is club-shaped, linear, angular, appressed to the scape, the 3 combined carpels attached to the 3-sided axis by a point, round at the back, slender, long, narrow below, or arrow-shaped in fruit (hence *Triglochin*). The plant is 6-12 in. high, flowering between June and August, and is a herbaceous perennial.

Marsh Scheuchzeria (*Scheuchzeria palustris*, L.).—The habitat of this plant is bogs, sphagnum bogs, and marshes. The plant has the grass habit. The rootstock is long, creeping, slender, clothed with the old leaf-stalks. The leaves are half-round in section, in two rows, few, alternate, blunt, with a small pore on the upper side of the

tip. The sheaths are swollen, brown. The flowers are few, 5, greenish, borne on a stout, curved scape, in a terminal, loose raceme, the flower-stalks lengthening in fruit. The perianth-segments are linear to oblong. There are 3 capsules, which are swollen, and large in proportion to the size of the plant. The plant is 6-8 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER CYPERACEÆ

Many-stalked Spike Rush (*Heleocharis multicaulis*, Sm.).—The habitat of this plant is marshes, pools, chiefly on moorlands. The plant has the rush habit. The rootstock (slightly creeping) is short, with one tuft of leaves and stems. The leaf-stalks are obliquely blunt. The stems are round in section. The sheaths are acute, leafless. The glumes are blunt, with narrow margins, the lowest glume the largest. There are 5-6 bristles. The stigmas are 3. The nuts are 3-angled, oblong to egg-shaped, conical, smooth, crowned with the broad-based, 3-angled style. The plant is 4-12 in. high, flowering in June and July, and is a herbaceous perennial.

Floating Club Rush (*Scirpus fluviatus*, L.).—The habitat of this plant is marshes and pools, peaty pools, ditches, and ponds. The plant has the club-rush habit, but is floating. The stems are flattened, slender, branched, rooting from the lower nodes, and zigzag, leafy. The leaves are clustered, linear, slender, and on land the plant is tufted, with the leaves sheathed. The flowers have solitary, terminal, egg-shaped spikelets, pale and narrow. The flower-stalks are alternate, with a leaf below. The 4-8 glumes are oblong, bluntly-keeled, membranous at the border, the 2 outer larger, not so long as the spike, and enclosing it. The nut is plano-convex, inversely egg-shaped, flattened, blunt-pointed, pale, smooth. There are 2 stigmas, the styles forming a beak to the nut. The plant is 6-18 in. long, and flowers in June and July, being a herbaceous perennial.

Savi's Club Rush (*Scirpus sylvii*, S. & M. = *S. filiformis*, Savi = *S. cernuus*, Vahl).—The habitat of this plant is damp places in S.W. England, &c., wet bogs in W. Scotland. The plant has the Club-rush habit. The stem is threadlike (hence *filiformis*). The plant closely resembles *S. setaceus*, but is larger, paler, the leaves longer, 1-2, narrow, channelled. The flowers are in terminal spikes, the spikelets 1-3, or solitary, more or less terminal. The lower bract is shorter, longer than the spike, the glumes blunt, hardly short-pointed, greenish, with a brown spot on the upper part each side. The nut is nearly round, not furrowed, 3-angled, pale, shining, rough, dotted in lines. The plant is 2-8 in. high, flowering in July and August, and is a herbaceous perennial.

Compressed Club Rush (*Scirpus compressus*, Pers. = *S. caricis*, Retz.).—The habitat of this plant is wet boggy pastures and marshes. The rootstock is long. The stem is triangular, solitary, sheathed below. The leaves are flat, not so long as the stem, grass-like, keeled, with rough

edges. There are 6-8 flowers in the spikelets, the outer glume in the lowest spikelet having an awl-like point longer than the spike, the spikelets being longer than the bracts. The bracts are leafy, long or short. The spikelets are brown. The lower glumes are ribbed, not so long as the spikelets, reddish-brown. There are 3-6 bristles, strong, persistent, with bent-down teeth. The nut is lenticular, shining, with a persistent style, pale. The plant is 4-10 in. high, flowering in June and July, and is a herbaceous perennial.

Alpine Cotton Grass (*Eriophorum alpinum*, L.).—The habitat of this plant is marshes and spongy bogs. The plant has the grass habit. The rootstock, which is creeping, gives rise to a number of stems and leaves. The stems are rigid, rough, slender, 3-angled, and the plant is slender and elegant. The leaves are bristle-like, short, channelled, rough. The spike is solitary, erect, oblong, lance-shaped, with few, oblong, narrow spikelets. The glumes are yellowish-brown. The 4-6 bristles are crumpled. The nut is very small, inversely egg-shaped, 3-angled. The plant is 4-8 in. high, and flowers in June. It is a herbaceous perennial.

Hare's Tail Cotton Grass (*Eriophorum vaginatum*, L.).—The habitat of this plant is bogs and moors, boggy moors. The habit is as in the last. The rootstock is short. The plant is tufted. The stems are hairless, numerous, triangular above, round in section below, longer in fruit. There are 1-2 leafless sheaths above the middle, the upper one inflated. The leaves are slender, long, bristle-like, channelled, 3-sided. The spike is solitary, oblong, with erect, egg-shaped, many-flowered spikelets. The bristles are numerous, straight, not crisped. The glumes are membranous, transparent, broadly egg-shaped, olive-green. The nut is inversely egg-shaped, blunt, with a short point, flattened. The plant is 6-10 in. high, and flowers from April to June, being a herbaceous perennial.

Broad-leaved Cotton Grass (*Eriophorum latifolium*, Hoppe = *E. paniculatum*, Druce = *E. pubescens*, Sm.).—The habitat of this plant is marshes and bogs. The plant has the grass habit. The rootstock is short. The stems are rigid, tufted, 3-angled above, hollow. The leaves are flat, the lip short, 3-angled above, linear, narrowed above the middle into the short triangular point. The spikes are several, with rough or downy flower-stalks, the spikelets in a cyme. The glumes are lance-shaped, with narrow, membranous borders. The bristles are two to three times as long as the spikes. The nuts are pear-shaped, 3-sided. The plant is 12-18 in. high, and flowers between May and July, being a herbaceous perennial.

Slender Cotton Grass (*Eriophorum gracile*, Roth).—The habitat of this plant is bogs. The habit is as in the above species. The stems are very slender (hence *gracile*), rather 3-sided, tall. The leaves are very narrow, 3-sided, channelled, short, linear. The bracts are small, 1-2. There are 4 spikes, with downy flower-stalks. The glumes are broad, blunt, with many ribs, brown. There are 3-6 spikelets. The nuts are narrow,

oblong to linear, inversely egg-shaped to lance-shaped, 3-sided. The bristles are twice as long as the spike. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Brown Beak Rush (*Rhynchospora fusca*, Ait.).—The habitat of this plant is spongy bogs. The plant has the sedge habit. The rootstock is longer than in the next, and the plant is widely creeping. The leaves are slender. The spikelets are in an oval head, much shorter than the outer bracts. The spikelets are brown (hence *fusca*). There are 3 stamens. The 6 bristles have ascending teeth. There are erect teeth at the base of the style. The anther-stalks are swollen. The fruit is inversely egg-shaped, as long as the triangular, toothed tubercles. The plant is 6-12 in. high. It flowers in June and July, and is a herbaceous perennial.

White Beak Rush (*Rhynchospora alba*, Vahl).—The habitat of this plant is spongy bogs, turf bogs, wet meadows. The habit is the sedge habit. The rootstock is short. The plant is somewhat creeping. The stems are slender, 3-angled above. The leaves are somewhat bristle-like, channelled, very narrow, linear. The flowers are in a compact corymb, terminal and axillary, flat-topped, on long stalks. The spikelets are pale-flowered, crowded, white (hence *alba*) or pale-brown, as long as the outer bracts. There are 2 stamens, with slender anther-stalks. The style has no teeth at the base. The bristles have bent-down teeth. The glumes are oblong to lance-shaped, long-pointed, membranous, keeled. The fruit is inversely egg-shaped, narrowed below, equalling the swollen tubercle (hence *Rhynchospora*). The plant is 6-18 in. high, flowering in June and July, and is a herbaceous perennial.

Black Bog Rush (*Schænus nigricans*, L.).—The habitat of this rush is turf bogs and wet moors. The plant has the sedge habit. The rootstock is stout, short, branched, the root with strong, black fibres. The stems are round in section, naked, in dense, hard tufts, with matted sheaths, blackish-brown, smooth, shining scales ending in bristle-like, erect leaves, shorter than the stem and leaves, wiry, leafless above. The leaves are round in section, the margins convolute. The 5-10 spikelets are in a terminal, inversely egg-shaped spike, much shorter than the bract, dark-red-brown, or black, shining. The bracts are bristle-like. The spikelets are erect, linear to oblong. The glumes are irregularly 2-ranked, oblong to lance-shaped, more or less acute, with a rough keel. The bristles have ascending teeth above, and are short and rough. There are 3 stigmas. The anthers are pointed. The nut is small, egg-shaped, white. The plant is 6-24 in. high, flowering in June and July, and is a herbaceous perennial.

Dioecious Sedge (*Carex dioica*, L.).—The habitat of this sedge is spongy bogs and moorland. The plant has the sedge habit. The rootstock is creeping and stoloniferous. The stems are round in section, finely-furrowed, wiry. The leaves are bristle-like, smooth, round in section. The spikelets have no bracts, and are narrow, cylindrical,

the fertile ones dense, egg-shaped. The glumes are egg-shaped, brown, soon falling. There may be male spikelets below. The glumes are numerous. The fruit is bent down, plano-convex, erect or spreading, stalkless, egg-shaped, beaked, toothed at the border, ribbed. The nut is oval, roundish, lenticular, chestnut-brown. The plant is 4-10 in. high, flowering in May and June, and is a herbaceous perennial.

Daval's Sedge (*Carex davalliana*, Sm.).—The habitat of this sedge is bogs. The habit is the grass habit with a tufted root. The stem is rough, slender, erect. The leaves are rough, bristle-like, flat. The plant is dioecious. There is a single terminal spikelet, oblong. The male flower has very narrow, oblong glumes. In the female they are egg-shaped, with a long point, chestnut, with no bracts. The fruit is reflexed, stalkless, beaked, lance-shaped, egg-shaped, with rough angles above. The stigmas are 2. The nut is oblong. The plant is 4-6 in. in height. It flowers in May and June, and is a herbaceous perennial.

Flea Sedge (*Carex pulicaris*, L.).—The habitat of this species is bogs. The plant has the sedge habit. The rootstock is tufted, shortly stoloniferous. The stems are smooth, rigid, round in section, grooved. The leaves are bristle-like, slender, erect, longer than the stem, with the margin inrolled. The spike is barren above, the spikelets without bracts. There are 6-12 glumes, the lower distant, egg-shaped to oblong, acute, half as long as the fruit. The fruit is bent-back, egg-shaped, lance-shaped, stalked, triangular, flea-like (hence *pulicaris*), flattened, beaked, pale. The rachæola or rudimentary rachis at the base of the ovary is linear, sometimes bearing flowers. The nut is oblong, plano-convex, grey or dark brown. The plant is 3-8 in. long, and flowers between May and July. It is a herbaceous perennial.

***Carex chodorrhiza*, Ehrh.**—The habitat of this sedge is Scotch spongy bogs. The plant has the sedge habit. The stems are smooth, erect, branched, and have short, sheathing leaves at the base, and are longer than the leaves. The spikelets are crowded in a small, shortly egg-shaped head. The bracts are long-pointed, membranous, the lower equalling the spike. The glumes are blunt, with a membranous margin. The fruit is inflated, egg-shaped, brown, shining, with dark-brown veins, narrowed suddenly to a small beak, divided into 2 nearly to the base. The nut is round. The plant is 6-12 in. high, and flowers in July and August, being a herbaceous perennial.

***Carex teretiuscula*, Good. (= *C. diandra*, Schrank).** The habitat of this species is bogs and meadows, boggy meadows. The plant has the sedge habit. The rootstock is obliquely creeping, forming scattered tufts. The stems are wiry, slender, 3-angled, with convex sides, rough above. The spike is dense, broad, compound, oblong. The spikelets are few. The fruit is egg-shaped, brown, shining, spreading, swollen, few-nerved, longer than the egg-shaped, long, narrow-pointed glumes, ribbed on the back, with 2-4 central ribs spreading from the base, and meeting under the beak. The beak

is winged. The nut is inversely pear-shaped, bi-convex. The plant is 9-18 in. high, flowering between June and August, and is a herbaceous perennial.

Carex paradoxa, Willd.—The habitat of this plant is marshes and bogs. The plant has the sedge habit. The rootstock is densely tufted, crowned with the fibrous remains or black, erect nerves of old sheaths, the decayed leaves. The stems are slender, 3-angled, rough above with convex sides. The panicles are narrow, small, long and loose, spicate, with lower distinct branches. The fruit is egg-shaped, swollen, the beak narrow, split to the base, with overlapping margins, with numerous short, raised ribs near the base. The nut is rhomboidal, narrowed below, doubly convex, with a short beak, which is not winged. The style is somewhat enlarged at the base. The plant is 9-18 in. high, flowering in June and July, and is a herbaceous perennial.

Grey Sedge (*Carex canescens*, L. = *C. curta*, Good.)—The habitat of this plant is bogs and marshes. The plant has the sedge habit. The plant is slender. The rootstock is tufted, with no stolons. The stems are 3-sided, smooth, hardly rough above, longer than the leaves. The leaves are narrow, flat. The spike is slender, interrupted, with few or no awl-like bracts. The spikelets are 3-8, egg-shaped, elliptic, touching the lower, often with a bract, male below only. The glumes are pale, the edges broad, membranous, white, with a green keel, blunt, short-pointed. The fruit is erect, acute, plano-convex, flattened, faintly ribbed, the ribs slender, whitish, broadly egg-shaped, as long as the glumes, pale-olive, not winged, with an obscure beak, short, notched, not split, rough on the borders. The nut is egg-shaped, elliptic, lenticular, with a short beak, pale. The styles are persistent. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Carex buxbaumii, Wahl. (= *C. fusca*, All. = *C. polygama*, Schkuhr).—The habitat of this plant is stony banks, spongy bogs, and wet places. The rootstock is short, creeping, stoloniferous. The stems are 3-sided, rigid, leafy below, rough. The leaves are narrow, flat, with reddish-brown, rigid sheaths, the edges net-like, filamentous. The lower bracts are leafy. The spikelets are 3-5, oblong, blunt, close, the lower distant, shortly-stalked. The glumes are rounded, blunt-pointed, the lower longer than the fruit, nearly black, or dark-red-brown, with a green keel which is blunt-pointed. The fruit is bluish-green, oval, ellipsoid, blunt, flattened, 3-angled at length, divided into 2 nearly to the base, shorter than the glumes, with slender ribs. The nut is 3-sided, inversely ovoid, brown, with white dots. There is no beak. The plant is 1-2 ft. in height, flowering in July, and is a herbaceous perennial.

Tufted Water Sedge (*Carex stricta*, Good. = *C. elata*, All. = *C. Hudsonii*, A. Benn.).—The habitat of this plant is marshy and peaty places. The plant has the sedge habit, and is slender. It is densely tufted. The stems are rigid, 3-sided, slightly rough above. The leaves are long, limp,

erect, flat, narrow, the margin rolled back when dry, with long, reddish-brown, shining, filamentous leaf-sheaths, the lower leafless. The fertile spikelets are stalkless, erect or drooping, long, cylindrical, 1-3, sometimes male above, stout, the male spikelets slender, 1-2. The bracts are variable, auricled, the lower leaflike, short. The fruit is rounded to egg-shaped, oblong to elliptic, acute, flattened, veined, closely overlapping, with green nerves, dark-purple, and with a green keel, in 6-9 regular rows, larger than the glumes, and a sheathing beak. The beak is short, notched. The glumes are pitchy, dark-brown, in 8 rows, egg-shaped, blunt, short-pointed, the lower with an excurrent rough midrib. The glumes of the male spikelets are narrow, acute. The nut is inversely egg-shaped, round, short-beaked. The plant is 1-3 ft. high, flowering between May and July, and is a herbaceous perennial.

Carex caspitsosa, L.—This species has been reported from Yorkshire, but needs confirmation, according to Mr. G. C. Druce.

Common Sedge (*Carex Goodenovii*, Gay = *C. vulgaris*, Fr. = *C. caspitsosa*, Sm. non L.).—The habitat of this species is damp places, marshes, and wet meadows. The plant has the sedge habit. The rootstock is tufted or creeping. The stem is 3-sided, rough above, rigid, short and curved, or long, slender, and erect. The leaves are slender, narrow, erect, not keeled, short, bent-back. The spikelets are erect, close or distant. There are 1-2 male, 3-4 female, which are stalkless, cylindrical. The glumes are dark, blunt, overlapping, all the same colour, purple, or with a green midrib and slender keel, pale-green, not so long as the fruit. The fruit is elliptic, plano-convex, blunt, green or olive, with purple tinge, many-veined, pitchy, flattened, with slender nerves only at the base sometimes. The beak is stout, round, entire, smooth. The bracts are leaflike and have no auricles or sheaths. The nut is round, blunt, broader than long, lenticular, rarely 3-sided. The plant is 9-24 in. high, flowering between June and August, and is a herbaceous perennial.

Water Sedge (*Carex aquatilis*, Wahl.)—The habitat of this plant is bogs and marshes, alpine bogs, riversides, watery places. The plant has the sedge habit. The rootstock is tufted, creeping, and stoloniferous. The stems are stiff, 3-angled with convex faces, stout, polished, leafy below. The leaves are long, erect, the margin rolled inwards when dry, the sheaths leafy, not webbed. The 3-6 spikelets are erect, cylindric, slender, stalked below, the males (1-3) are slender, the fertile spikelets long, narrow below, the lower stalked. The glumes are oblong or egg-shaped, short, blunt, dark, narrower than the fruit, purple, with a pale midrib. The fruit is yellowish-green, somewhat rounded, egg-shaped or inversely so, flattened, pale, smooth, nerveless, larger than the glumes, lenticular or 3-sided. The nut is oblong, narrowed below, with a short, slender beak. The plant is 1-4 ft. high, flowering in June and July, and is a herbaceous perennial.

Carex spiculosa, Fr. var. *Hebridensis*, A. Benn.—This variety has no rough prolongation of the midrib of the glume, which is characteristic of the type.

Carex magellanica, Lam. (= *C. irrigua*, Hoppe).—The habitat of this species is spongy bogs in the N. The plant has the sedge habit. The plant is creeping. The stems are more or less smooth. The leaves are flat, broad, short, hardly bluish-green, linear, smooth at the edge, except near the tip. The fertile spikelets are 2-3, drooping, on long stalks, dense, oblong, a few male below. The lower glumes are narrow, with a long point, the upper glumes broader and shorter, purple throughout, longer than the fruit, egg-shaped to lance-shaped, acute. The bracts are auricled, leaflike, nearly flat, broad. The fruit is swollen, round to egg-shaped, pale, broadest below the middle, flattened, faintly-ribbed, the beak short and entire. The nut is elliptic, triangular, pale, beaked. The plant is 1 ft. or more in height. It flowers in June, and is a herbaceous perennial.

Green-and-gold Sedge (*Carex limosa*, L.).—The habitat of this species is spongy bogs. The plant has the sedge habit. The plant is creeping, with a slender rootstock. The stems are slender, 3-sided. The leaves are narrow, bluish-green, linear, channelled, rough at the margin, bent-back. The bracts are auricled, short, and slender, strongly-keeled, scarcely sheathing. The fertile spikelets are 1-2, drooping, short, long-stalked, egg-shaped, cylindrical or oblong, dense-flowered, a few male at the top, as long as the stalk, which is slender. The male spikelets are erect, slender, with some female above. The glumes are broad, blunt-pointed, pale, few, large, loose, egg-shaped, with a green midrib, ribbed, with brown margins. The fruit is more or less 3-angled, blunt-pointed, bluish-green, as long as the glume, flattened, round, ellipsoid, ribbed, the beak short and entire. The nut is oval, inversely egg-shaped, 3-angled, beaked, pale. The plant is 6-15 in. high, flowering in June and July, and is a herbaceous perennial.

Loose-flowered Alpine Sedge (*Carex rariflora*, Sm.).—The habitat of this plant is alpine bogs, wet places, on Scotch mountains, elevated bogs in the Highlands. The plant has the sedge habit. The rootstock is creeping. The stems are wiry, 3-angled, smooth, leafy below. The leaves are erect, narrow, flat, rough at the edge near the apex. The bracts are short, with very short sheaths. The fertile spikelets are as long as the long, hairlike, ultimate flower-stalks, 2-3, drooping, few-flowered, oblong, loose. The male spikelet (1) is short, nearly erect. The glumes are broad, pale-brown, membranous, blunt, shining, folded round the fruit, dark-brown, with a pale midrib, apiculate, as long as the fruit. The fruit is stalked, oblong, elliptic to inversely egg-shaped, shorter than the glume, with a narrow point, 3-angled, green or brown, smooth, faintly-nerved, the beak very short, entire. The nut is brown, oblong, 3-angled, dotted, round to oblong. The

plant is 4-12 in., flowering between June and August, and is a herbaceous perennial.

Slender-leaved Sedge (*Carex filiformis*, L. = *C. lasiocarpa*, Ehrh.).—The habitat of this plant is bogs and marshes, peat bogs. The plant has the sedge habit and is slender. The rootstock is creeping, and the plant is stoloniferous. The stem is somewhat rough above, 3-angled, leafy. The leaves are very long, numerous, very slender (hence *filiformis*), stiff, short, channelled, the margin inrolled, with a filamentous, bordered sheath below, red-brown, stout, the 2-3 lower very long, without a blade. The bracts are leaflike, the lowermost sheathing. The fertile spikelets, 3-4, are oblong, blunt, stalkless, distant, loose, erect, the lower bracts thread-like, longer than the stem. The male spikelets are 2-3, brown, very slender. The glumes are lance-shaped, narrow-pointed, chestnut-brown, the margin the same colour, the midrib green, that of the male florets narrower and more membranous. The fruit is plano-convex, narrow to egg-shaped, swollen, downy, as long as the glumes, green, narrowed to a blunt beak, divided into 2 nearly to the base. The nut is narrowly elliptic, 3-angled, stalked. The plant is 2-3 ft. high, flowering in May and June, and is a herbaceous perennial.

Tawny Sedge (*Carex fulva*, Host = *C. Hornschuchiana*, Hoppe = *C. Horleana*, D.C.).—The habitat of this plant is marshes and boggy places. The plant has the sedge habit. The rootstock is often creeping. The stem is 3-angled, with a rough edge. The leaves are flat, broad. The bracts are long, sheathing, not so long as the stem. The fertile spikelets are 2-3, egg-shaped, oblong, distant, the stalks longer than the sheaths. The glumes are blunt or acute, not blunt-pointed, the tips with membranous margin. The fruit is egg-shaped, 3-sided, with a rough edge, membranous, in the notch, broad below, not dotted, ribbed. The nut is inversely egg-shaped, 3-angled, more or less smooth. The plant is 1-1½ ft. high, flowering between May and July, and is a herbaceous perennial.

Bladder-fruited Sedge (*Carex vesicaria*, L.).—The habitat of this plant is wet bogs, marshy places. The plant has the sedge habit. The rootstock is tufted, creeping. The plant is stout. The stems are triangular, rough at the top, with acute angles. The leaves are broad, green, flat, soft, the edges of the sheaths filamentous. The bracts are leaflike. The spikelets are cylindrical, many, stout, the male 2-3, slender, pale-brown, sometimes with female above, the fertile spikelets 2-4, distant, cylindrical, pale, shortly-stalked, inclined or drooping. The glumes are lance-shaped, rather acute, with membranous margin, smaller than the fruit, narrow, chestnut-brown, with a pale midrib, blunt, those of the male spikelets linear to oblong. The fruit is large, spreading, conical to egg-shaped, inflated, ribbed, 3-angled, pale, dull-yellow, shining, with faint nerves, narrowed to the beak, which is awl-like, divided into 2 nearly to the base. The beak is stout, smooth, rigid, brown, long, slender. The nut is inversely egg-shaped,

broadly elliptical, 3-angled, pale, with a long beak. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Bottle-fruited Sedge (*Carex ampullacea*, Good. = *C. inflata*, Huds. = *C. rostrata*, Stokes).—The habitat of this plant is wet bogs and marshes. The plant has the sedge habit. The rootstock is tufted and creeping. The stems are 3-angled, smooth, the angles blunt. The leaves are channeled, bluish-green, the margins rolled back. The fertile spikelets are pale, stout, cylindrical, 2-4 distant, erect, stalked or stalkless, inclined or spreading, dense. The male spikelets are 2-3, slender, with sometimes female at the base. The bracts are leaflike without a sheath, longer than the stem. The glumes are lance-shaped, inversely egg-shaped, with membranous tip. The fruit is spreading, egg-shaped, rounded, suddenly narrowed into a long, slender beak, pale-yellowish-green, swollen, ribbed, shining, as broad as long, 3-sided, horizontal or bent-down when ripe, narrowed into a long beak. The nut is inversely egg-shaped, triangular, yellow. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Russet Sedge (*Carex saxatilis*, L. = *C. pulla*, Good.).—The habitat of this plant is damp places on Scotch mountains. The plant has the sedge habit. The stems are short. There is 1 male spikelet or 2. The fertile spikelets are 1-3, egg-shaped, very dark, round to egg-shaped, the lower stalked, with bracts without sheaths, erect, black or dark-brown. The glumes are blunt, dark-purple, with white tips, the midrib dark-purple. The fruit is egg-shaped, with faint (or no) ribs, inflated, dark-purple, paler below, longer than the glumes, stalked. The beak is short, notched. The nut is round, blunt-pointed. There are 2 stigmas. The plant is 4-10 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Deyeuxia neglecta, Kunth.—The habitat of this grass is marshes and bogs. The plant has the grass habit. The stems are erect, slender, smooth, polished. The leaves are broad, short, flat, the lower on the barren shoots slender, narrower, the margins convolute, nearly smooth. The ligule is short, the uppermost blunt. The panicle is narrow, erect, close, pale-purple and green. The

glumes are lance-shaped, with a rough keel, one 3-ribbed. The empty glumes are oblong to lance-shaped, longer than the flowering glume, the lower long-pointed, the upper notched, acute, twice as long as the hairs, the awn straight, from below the middle of the flowering glume. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Deyeuxia strigosa, Kunth.—This plant has the grass habit. It is tufted. The stem is erect. The leaves are slender. The upper ligule is long. The panicle is close. The glumes are lance-shaped, folded at the tip, longer than in the last, with a long narrow point, rough on the back, with 1-2 lateral ribs longer than the palea, notched, the lower with an awn of equal length, attached below the middle, or near the base, with very unequal hairs, not so long as the palea. The young spikelets are purplish-tinged. The plant is 1½-2 ft. high, flowering in July, and is a herbaceous perennial.

Cutgrass (*Leersia oryzoides*, Sw.).—The habitat of this species is stream-sides, marshy districts, wet meadows, and watery places. The plant has the grass habit. The root is creeping. The stems are prostrate below, smooth, shining, leafy, softly hairy at the nodes. The leaves are broad, rough at the edge, the uppermost horizontal when the plant is in flower, bluish-green. The sheaths are flattened, nearly smooth. The ligule is blunt, torn. The panicle is effuse, spreading, with wavy branches, light-green, enclosed in sheath of uppermost leaf, loose, few-flowered, branches half-whorled, hair-like, wavy. There are imperfect ovaries in the upper part, fertile ovaries in the lower enclosed part. The spikelets are half-oval, with a keel fringed with hairs, with 3 stamens, rigid, translucent, smooth, rough, pale-green. The plant is 2-3 ft. high, flowering between August and October, and is a herbaceous perennial.

Marsh Hair Grass (*Deschampsia setacea*, Hack. = *D. uliginosa*, Weihe = *D. discolor*, R. & S.).—The habitat of this grass is margins of peaty pools. The stem is erect and slender. The leaves are thread-like, folded. The sheaths are smooth. The ligule is linear to lance-shaped. The panicle is spreading, drooping at the extremity. The awn is bent, twisted below, proceeds from the base of the palea, and is longer than the latter. The flower-stalk of the second floret is equal to half its length. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

FLOWERS OF THE HEATHS AND MOORS

[Heath plants are adapted to dry-soil conditions, and for this reason some of them are common to other habitats, such as dry pastures, which may formerly have been heaths, commons, &c. Heath plants are also adapted to physiologically dry conditions, and may grow on moors, which are in turn akin to bogs. Therefore the plants included in this section may under certain conditions be found elsewhere, and vice versa. As a whole they form a well-marked group or type of formation, characterized by a dry sandy soil, with acid humus.]

ORDER VIOLACEÆ

Dog Violet (*Viola canina*, L. = *V. erectorum*, Schrad.).—The habitat of this plant is heathy places, open commons, shady groves, hedgerows, seashores, &c. The habit is ascending. The plant is slender, branched, the flowering branches axillary, not arising from a flowerless rosette of leaves. The rootstock is slender, herbaceous or woody below. The stems are numerous, all producing flowers from the axils. The stipules are moderately long and narrow-pointed. The leaves are longer than broad, not long and narrow-pointed, with short, scattered hairs above. The flowers are scentless, blue, with a white eye. The sepals are lance-shaped, not accrescent in fruit. The petals are longer than broad. The spur is yellow. The anther-spurs are short, thick, sickle-like. The capsule is hairless, blunt, bluntly 3-sided. The plant is 2-4 in. high, flowering from April till June, and is a herbaceous perennial.

Viola lactea, Sm. (= *V. lancifolia*, Thore).—The habitat of this plant is dry heaths and downs. The plant has the loose rosette habit. The rootstock is woody, without siboles. The stems are ascending, brown, smooth, wiry. The lowest stipules are brown, small, lance-shaped, long-fringed, the middle half as long as the leaf-stalks, lance-shaped, long-fringed, the upper as long as or longer than the leaf-stalks, opposite, egg-shaped to lance-shaped, irregularly toothed, with teeth as long as the stipule is broad. The leaves are dark-green, smooth, coarsely-veined, sparingly hairy above, the lowest small, roundish, fading, on long stalks, the upper egg-shaped to lance-shaped, round or wedge-shaped below, slightly running down the stalk on the shorter stalk, not heart-shaped, the uppermost on still shorter stalks. The flowers are scentless, pale bluish-white, streaked, on long slender stalks, with bracts near the curvature of the stalk, entire, or with few teeth. The sepals are narrow, lance-shaped, awl-like. The petals are lance-shaped, pointed, 3-4 times longer than broad, the lowest folded inward. The spurs are greenish-yellow, blunt, twice or more longer than the calyx appendages. The anther-spurs are thick, curved, shorter than the anther, which has

an acute apical scale. The capsule is smooth, nearly round, at first long-pointed on opening. The plant is 3-5 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER POLYGALACEÆ

Heath Milkwort (*Polygala depressa*, Wender = *P. serpyllacea*, Weihe).—The habitat of this plant is dry pastures, heaths, heathy places. The habit is prostrate (hence *depressa*). The stem is wavy, wiry, long, much branched, the upper part (like the flower-stalk, sepals, petals, and capsule) sometimes downy. The upper leaves are chiefly opposite, the lower oblong, spoon-shaped, and the upper elliptic, scattered, in 2 rows, or crowded. The bract is shorter than the flower-stalk. The flowers are variable, few in a raceme, terminal and lateral. The calyx wings are as broad as the fruit. The plant is 1-10 in. long, flowering from June to September, and is a herbaceous perennial.

ORDER CARYOPHYLLACEÆ

Striate Corn Catchfly (*Silene conica*, L.).—The habitat of this plant is sandy fields, sandy places near the coast, pastures, and sandy heaths. The plant is erect in habit. It is hairy and glandular, branching repeatedly into two. The stem is simple or branched, erect. The leaves are linear, the upper awl-like, downy, acute, ribbed. The flowers are numerous, erect, rose-colour, terminal, and in the forks. The calyx is tubular, conical in fruit, and broad at the base (hence *conica*), rounded below, with 30 furrows, the teeth awl-like, acute. The petals are inversely heart-shaped, crowded, cleft, with 2 scales at the base of the blade. The gynophore is very short. The capsule is oblong to egg-shaped. The plant is 3-18 in. high, flowering from May to August, and is a herbaceous perennial.

Erect Chickweed (*Manchia erecta*, Gaertn.).—The habitat is sandy places, waste places near the sea, heaths, &c. The stem is branched from the base. The radical leaves are inversely ovate, lance-shaped, the stem-leaves broader above. The flowers are white, in a leafy cyme. The sepals

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are 4-5 (with membranous margin), the petals notched, with branched veins. The flower-stalk is erect in fruit. The capsule is hardly longer than the sepals, erect, straight. The plant is 4-12 in. high, flowers from April to October, and is a herbaceous annual.

Stitchwort (*Stellaria apetala*, Ucria = *S. Boræana*, Jord.).—The habitat of this species is dry banks and heaths. The habit is prostrate, branched below. From *S. media* it differs in having 3 stamens, and there are no petals (hence the Latin specific name) and no styles, the stigma is short and bent. The small seeds have small, blunt, wart-like projections. The plant is pale-yellowish-green. It is 3-12 in. in height, and flowers from March to May, being a herbaceous annual.

Fine-leaved Sandwort (*Arenaria tenuifolia*, L.).—Fine-leaved Sandwort grows in sandy fields or waste places. The habit is erect, the plant being slender, with simple or forked, branched stems. The leaves are awl-shaped, linear. The white flowers are borne in the forks, and the sepals, which are 3-veined, are as long as, or shorter than, the egg-shaped petals. The capsule is 3-valved. The plant is from 4-6 in. in height. May and June are the months in which it is in flower. Like some other Caryophyllaceous plants it is an annual.

Sandwort (*Arenaria leptoclados*, Guss.).—This Sandwort is found in dry, sandy places, and in chalky fields, also on walls, along roadsides, and on cultivated ground. The habit is prostrate, and the plant is branched, slender, weak, not rigid as in *A. serpyllifolia*. It is downy, the leaves stalkless, acute, egg-shaped, smaller and narrower than those of the latter. The flower is white, the fruit-stalk is curved above, becoming straight, and the capsule is oblong and flexible, not brittle. The plant is from 3-6 in. or 1 ft. long. It is in flower from May to August. The plant is annual.

Ciliated Pearlwort (*Sagina ciliata*, Fries = *S. patula*, Jord.).—The habitat of this species is dry places, sandy heaths. The habit is erect or spreading. The plant is smooth or glandular, downy. The central stems are flowering and erect or ascending, like the branches, not rooting. The leaves are fringed with hairs (hence *ciliata*), blunt-pointed, linear. The flowers are white. The 2 outer sepals are pressed close to the capsule, pointed, hardly shorter than the capsule, the tips spreading, glandular, hairy, like the flower-stalks. The petals are very small. The capsule is ovate to narrow, rounded below, stalked. The plant is 1-6 in. high, flowering from May to July, and is a herbaceous annual.

Procumbent Pearlwort (*Sagina procumbens*, L.).—The habitat of this species is waste places, paths, banks. The habit is prostrate. The stems are numerous, with long, tufted, axillary branches from a central rosette, the primary shoot flowerless, long-rooting, lateral, slender, the ultimate branches tufted. The leaves are smooth, blunt, with a short, blunt point, awned. The flowers are solitary, as a rule, with the parts sometimes

in fives, white, the sepals spreading in fruit, blunt, shorter than the capsule. The petals are very small, blunt, sometimes wanting. The tip of the stalk is bent-back after flowering, then erect. The styles are bent-back after flowering. The capsule is longer than the sepals. The plant is 1-8 in. in length, flowering from May to September, and is a herbaceous perennial.

Slender Pearlwort (*Sagina subulata*, Presl).—The habitat of this plant is heathy places, heaths, dry pastures, dry gravelly, sandy places. The plant has the rosette habit, and is tufted. The stem is prostrate, glandular, hairy. The leaves are linear, awned, fringed with hairs. The flowers are white, the petals as long as the capsule, longer than the calyx. The flower-stalks are glandular, very long; the tip bent-back in fruit, then erect. The sepals are closely pressed, blunt, glandular, lance-shaped. The capsule is longer than the sepals, egg-shaped, narrowed, round below, stalkless. The plant is 1-2 in. in height, flowering between June and August, and is a herbaceous perennial.

Knotted Spurrey (*Sagina nodosa*, Fenzl).—The habitat of this plant is moist heaths, sandy places, wet places. The plant has more or less the loose rosette habit, or is prostrate. The plant is smooth as a rule. The primary stem is short, and does not flower, the lateral stems are prostrate, then ascending at the base, 2-6 in. long. The stems are leafy to the top of the branches, which are curved, wiry, rooting at the nodes. The leaves are linear, awl-like, acute, hairless, with leafbluds in the axils, tufted, longer than the sepals. The flower-stalks are short, erect, 1-2-flowered. The flowers are large, white. The petals are longer than the sepals, which are blunt, oblong. The capsules exceed the sepals. The plant is 2-6 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER PORTULACEÆ

Blinks (*Montia verna*, Neck.).—The habitat of this plant is brooks, marshes, watery places. The habit is tufted. The plant is pale-green, limp, branched. The stem is short, rigid, erect. The leaves are opposite, spoon-shaped, entire, not free at the base. The flowers are white, very small, drooping, then erect, the flower-stalks terminal and axillary. The bracts have a membranous border. The petals exceed the blunt sepals. The capsule is inversely egg-shaped. The valves are rolled longitudinally inwards after the seeds fall. The seeds are shining, netted, rough. The plant is 1-3 in. high, flowering between May and August, and is a herbaceous annual.

Montia lamprosperma, Cham. = *M. fontana*, L. *vera*.—The habitat is wet places, wet heaths. The stem is limp, more or less erect. The leaves are free below. The flowers are white, small. The seeds are chestnut-brown, shining, netted, with obscure tubercles. The plant is 3-8 in. high, flowering from May to August, and is a herbaceous annual.

ORDER HYPERICACEÆ

Trailing St. John's Wort (*Hypericum humifusum*, L.).—The habitat of this plant is gravelly and heathy places, roadsides, commons. The plant is prostrate in habit (hence *humifusum*). The stems are numerous, prostrate, then ascending, with 2 raised lines, or 2-edged, slender. The leaves are oval to oblong, blunt, hairless, minutely dotted, transparent, with black dots on the borders below, the border rolled back. The branches are numerous, flattened, curved upwards, leafy. The flowers are yellow, in forked cymes. The sepals are glandular, toothed, with black dots below, unequal, entire, 3 oblong, blunt, with a short point, 2 lance-shaped. There are 15–20 stamens. The styles are very short. The plant is 4–10 in. high, flowering in July and August, and is a herbaceous perennial.

Narrow-leaved St. John's Wort (*Hypericum linariifolium*, Vahl).—The habitat of this plant is dry rocky banks, granite rocks. The habit is erect or ascending. The stems are more or less round in section, many, leafy. The leaves are linear, blunt, the margins rolled back. The flowers are yellow, few, in cymes. The sepals are unequal, lance-shaped, acute, with glandular teeth and black dots below. The petals are twice as long as the sepals, with black marginal glands. There are few stamens (30). The styles are short, half as long as the capsule. The plant is 4–12 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER LINACEÆ

Allseed (*Radiola linoides*, Roth).—The habitat of this plant is damp, sandy, gravelly places, bare spots on heathy places. The habit is erect, inversely pyramidal. The stem is repeatedly forked. The leaves are egg-shaped, entire, acute, 3-5-nerved, stalkless, rather succulent. The flowers are solitary, small, white, in the axils and terminal. The sepals are deeply acutely 3-cleft, united below, as long as the petals, which are oblong. The parts of the flower are in fours. The plant is 1–3 in. high, flowering in July and August, and is a herbaceous annual.

Purging Flax (*Linum catharticum*, L.).—The habitat of this species is dry pastures, heaths, downs. The plant has the grass habit. The stems are square in section, one or more, much branched, slender, hairless, bluish-green. The leaves are opposite, linear to oblong, inversely egg-shaped, the upper alternate, lance-shaped. The flowers are white, small, in a forked panicle, spreading. The buds are drooping. The sepals are elliptic, acute, toothed, 1-nerved, long-pointed. The petals are distinct, acute, oblong, blunt. The plant is 2–10 in. high, flowering between June and August, and is a herbaceous annual.

ORDER GERANIACEÆ

Dove's Foot (*Geranium molle*, L.).—Dove's Foot is found in pastures and waste places, dry places,

cultivated ground. The habit is the rosette habit, prostrate. The plant is softly downy, glandular above. The stem is spreading. The leaves are rounded to kidney-shaped, with 7–9 lobes, which are contiguous, wedge-shaped, deep, scalloped, trifid at the tip. The radical leaves are long-stalked. The stipules are ovate. The flowers are small, purple or white, with lilac claws, fringed with hairs, the sepals blunt-pointed, shorter than the petals, which are notched, oblong. The flower-stalks are axillary. The carpels are persistent, transversely wrinkled, keeled, smooth. The seeds are smooth. The plant is 6–12 in. high, flowering from April to September, and is a herbaceous annual.

ORDER EMPETRACEÆ

Crowberry (*Empetrum nigrum*, L.).—The habitat of this plant is moors and mountain heaths. The plant has the shrub habit. The plant is prostrate, then ascending, smooth, tufted, slender, wiry, spreading, trailing. The leaves are evergreen, linear to oblong, crowded, blunt, the borders bent-back to the midrib, forming a tube, an adaptation to dry conditions, the stomata being below, red when old, the borders roughish, downy below. The flowers are small, purple, stalkless, axillary. The sepals are rounded, hollow. The petals have a membranous margin, and are rather spoon-shaped, bent-back. The anther-stalks are very long, the anthers red. The drupe is black, edible. The plant is 6–18 in. high, flowering from April to June, and is an evergreen perennial shrub.

ORDER RHAMNACEÆ

Berry-bearing Alder (*Rhamnus Frangula*, L.).—This plant grows on peaty heaths and in woods. It has the shrub habit. The branches are not spinose, slender, alternate. The leaves are alternate, inversely ovate, elliptic, entire, long-pointed, narrow below, the nerves parallel. The stipules are awl-like. The flowers are 5-fid, perfect, a few in the axils, clustered, greenish-white. The calyx is bell-shaped. The style is simple, entire. The fruit is a round drupe, black when ripe, 2-seeded. The stones and seeds are flattened, inversely ovoid. This plant is 5–10 ft. high, flowering in May and June, and is a deciduous shrub.

ORDER LEGUMINOSÆ

Dyer's Greenweed (*Genista tinctoria*, L.).—The habitat of this plant is meadows, fields, heaths, sunny pastures, coarse pastures, and the plant also grows under the shade of trees and in coppices. The plant has the shrub habit. The stem is smooth, branched, rigid, furrowed. The branches are erect or ascending, without thorns, downy above. The leaflets are lance-shaped, elliptic, oblong, hairy at the border, closely pressed. The stipules are very small, awl-shaped. The flowers are yellow, in slender racemes. The keel is hairless, as long as the standard. The

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calyx is deciduous above the base, with sharp, long teeth. The pod is hairless. The plant is 1-2 ft. high, flowering from July to September, and is a perennial shrub.

Hairy Dyer's Greenweed (*Genista pilosa*, L.).—This is an ericetal species, found on gravelly heaths or dry sandy heaths. The habit is prostrate, then ascending. The plant is not armed with spines, but covered with silky hair (hence *pilosa*). The stem is woody, branched, spreading, curved, furrowed, wavy. The leaves are 1-foliate, the leaflets inversely ovate to lance-shaped, blunt, shortly-stalked. The stipules are blunt and ovate. The flowers are in short, leafy racemes, yellow, and the flower-stalks are lateral, with a tuft of leaves. The calyx has 2 upper lance-shaped lobes, the 3 lower being awl-like. The keel and standard are downy. The pod is hairy, flat, at length falling. The plant is 6-12 in. in height, flowering between May and September. It is a perennial shrub.

Needle Furze (*Genista anglica*, L.).—This is a native species, and ericetal, growing on heaths and moist moors or moist peaty heaths. The habit is that of a shrub. The plant is ascending, however, not prostrate, as in the last, and a further difference is the spinous stem (hence Needle Furze). The stem is smooth, not hairy, with slender, spreading, curved branches, leafless below, the flowering branches having no thorns, and smooth. The spines are slender, simple, bent-back. The leaflets are ovate to lance-shaped. There are no stipules, or only obsolete ones. The flowers are in a short, leafy raceme, solitary, yellow, on short stalks, in the axils of the leaflets. The corolla is smooth. The keel is longer than the standard. The calyx is persistent, with short, triangular teeth. The pod is inflated, with a short point at each end, deciduous. The plant is 1-2 ft. in height, flowering in May and June, and is a perennial shrub.

Western Furze (*Ulex Gallii*, Planch.).—The habitat of this plant is heaths and downs in the West. The plant has the shrub habit. The stem is hairy, with spreading branches. The young leaves are smooth, fringed with hairs, and furrowed. The primary spines are strong and smooth, bent-down, rigid, half-round in section. The flowers are orange-yellow, lateral and terminal, with small bracts pressed to the stem. The calyx is finely downy, with spreading teeth. The corolla has the petals more or less spreading. The wings are not straight. The pods burst open. The plant is 1-5 ft. in height, flowering between July and November, and is a perennial shrub.

Small Furze (*Ulex nanus*, Forster = *U. minor*, Roth).—The habitat of this species is heaths and commons in the S. and E. of England. The plant has the shrub habit, resembling *U. europeus*, but smaller. The stem is prostrate, then ascending, hairy. The primary spines are short, slender, round in section, finely furrowed, smooth, spreading, branched below. The flowers are in a raceme, yellow, half as large as in the Common Furze, with very small bracts, and are borne in the axils

of primary spines, which are longer. The calyx is finely downy, the hairs appressed, the teeth spreading, lance-shaped. The petals are hardly distinct at length, the wing not so long as, or shorter than, the keel. The pod is persistent, till the next season. The plant is 1-3 ft. in height. It flowers between July and November. It is a perennial shrub.

Fenugreek (*Trigonella ornithopodioides*, L.).—The habitat of this plant is sandy heaths, dry gravelly places, sandy pastures. The habit is prostrate. The stem is without hairs, with slender branches from the base. The leaflets are inversely heart-shaped, toothed, with prominent veins. The leaf-stalk is short. There are large ovate stipules, with a long narrow point. The flowers are solitary, or in small heads or clusters of 3 flowers, in the axils, shortly-stalked, pink or white. The calyx is smooth, with slender, acute teeth, erect, and subequal. The petals are distinct, the keel about as long as the wings. The pods are flattened, curved, linear to oblong, blunt, with transverse furrows, hairy, exceeding the calyx, and open by 2 valves. There are 6-8 seeds. The plant is 2-8 in. in height, flowering in June and July, and is a herbaceous annual or biennial.

Medicago sylvestris, Fries.—The habitat of this plant is sandy and gravelly places, heaths, dry banks, waste places. The plant is rare. The habit is ascending. The stem is more or less square in section, pithy. The leaves are trifoliate, the leaflets inversely ovate to oblong, toothed, notched, with a blunt point. The flowers are large, yellow or blackish-green with darker streaks, and change to green. The pods form a complete flat ring, the stalks being shorter than the calyx, and longer than the bract. The plant is 6 in. to 2 ft. high, flowering in June and July, and is a herbaceous perennial.

Sickle Medick (*Medicago falcata*, L.).—The habitat of this plant is sandy, gravelly places, gravel banks, dry banks, waste sandy places, heaths. The habit is erect or prostrate. The stem is usually round, nearly solid, branched. The leaflets are narrowly linear, inversely egg-shaped to oblong, toothed, notched, blunt-pointed. The stipules are large and awl-like. The flowers are large and yellow, in narrow racemes, on short stalks, which are shorter than the calyx, longer than the bracts. The pods are linear, with flattened margins, straightly sickle-like (hence *falcata*), twisted, downy. The plant is 6 in. to 2 ft. high, flowering in June and July, and is a herbaceous perennial.

Toothed Bur Medick (*Medicago denticulata*, Willd.).—The habitat of this plant is sandy ground near the sea and waste places. The habit is prostrate. The plant is nearly smooth, slightly glandular. The stems are furrowed. The leaves are trifoliate, the leaflets inversely heart-shaped. The stipules are laciniate. The flowers are yellow, in umbels on very short stalks with 1-5 flowers. The pods are flat, deeply netted, loosely coiled two to three times, with a thin edge, with a double row of long spines, which are awl-like, equal to or

half the diameter of the pod, in 2 rows, spreading, hooked. The seeds are narrowly kidney-shaped. The plant is 6 in. to 2 ft. high, flowering from May to August, and is a herbaceous annual.

Spotted Bur Medick (*Medicago arabica*, Huds.).—The habitat of this plant is either by the way-side, on hedgebanks, or in pastures, or waste ground, cornfields. It is more common in South and South-east England, and a casual elsewhere. The habit is prostrate, the numerous smooth stems bearing inversely heart-shaped leaflets, with a purple spot (hence another name, *maculata*, Sibth.) in the centre. The flower-stalks bear 1-4 yellow flowers, and the nearly round pods with 3-5 coils, many-seeded, bear 4 ridges and a central furrow on the broad edges. The plant is 5-8 in. in height. It flowers between May and August, and is an annual.

Little Bur Medick (*Medicago minima*, Wess.).—The habitat of this plant is sandy fields, chiefly in the south-east, but it is a rare plant. The plant is prostrate, rigid, downy, with numerous stems. The flowers are yellow. The pods are nearly round, and differ from those of the rest of the Medicks in being smooth, with a thin edge, coiled four times. The flowers are very small, being not more than $\frac{1}{8}$ in. across. The plant is 6-10 in. in length. Flowers are found between May and July, and like the others the plant is annual.

Slender Clover (*Trifolium filiforme*, L.).—The habitat of this plant is dry places, often near the sea, heaths, &c. The habit is prostrate. The plant is sparingly hairy. The stem is very slender (hence *filiforme*). The leaves have lobes each side of a common stalk in threes, or finger-like. The leaflets are inversely heart-shaped or egg-shaped, toothed at the tip, stalkless. The stipules are egg-shaped above, acute. The flowers are dark-yellow, few (2-7), in a loose raceme, turned-back, axillary. The flower-stalk is thread-like, the ultimate stalks as long as the calyx, spreading, or turned-back. The standard is keeled, folded over, the pod deeply notched. The pod and calyx are as in the last. The plant is 2-9 in. long, flowering in June and July, and is a herbaceous annual.

ORDER ROSACEÆ

Rubus Rogersii, Linton.—The habitat of this plant is heaths, moors, in sunny places. The habit is shrub-like. The stems are suberect, the leaves rather small, 6-lobed, finely, closely, and evenly toothed. The leaflets are greyish-green, very pale, felted beneath, the terminal leaflets egg-shaped, heart-shaped, with a long point. The panicle bears crowded, sickle-like prickles, stout at the base. The style and stamens are of about the same length. The fruiting sepals are loosely turned-back.

Rubus integrabasis, P. F. Mueller.—The habitat of this species is sandy commons and stream borders. The habit is shrub-like. The stem is suberect, slender, high-arching. The leaves are only thinly hairy beneath. The leaflets are opaque above, the terminal leaflet inversely egg-shaped,

or oval, with a blunt point. The panicle is loose, racemose, very narrow, with weak, declining prickles. The sepals are hairy and grey, or greyish-green externally. The plant flowers early.

Creeping Tormentilla (*Potentilla procumbens*, Sibth.).—The habitat of this species is woods and hedges, hedgebanks. The habit is trailing or prostrate, then ascending, rooting at the joints. The leaflets are inversely ovate to wedge-shaped, the stem-leaves with 3-5 leaflets, sometimes stalked, with the stipules entire or divided into 3 lobes. The flowers are large, yellow, few or solitary, $\frac{1}{2}$ in. across. There are 4 or 5 petals. The achenes are netted. The plant is 6-15 in. long, and is in flower between June and September. It is a herbaceous perennial.

Silvery Cinquefoil (*Potentilla argentea*, L.).—The habitat of this species is dry gravelly pastures and roadsides. The habit is prostrate and ascending. The plant is covered with closely pressed woolly, silvery, hairs (hence *argentea*). The rootstock is short and woody. The stems are slender, branched, leafy. The leaves are 5-lobed, finger-like, stalked, the upper nearly stalkless. The leaflets are narrow, wedge-shaped, inversely egg-shaped, cut, toothed, white and downy below, with a rolled-back or bent-back margin, half-divided nearly to the base. The flowers are small, yellow, in more or less of a corymb, terminal. The flowering stems are annual at the end of the branches of the perennial rootstock. The receptacle is hairy. The achenes are smooth and hairless. The plant is 4-18 in. long, flowering from June to August, and is a herbaceous perennial.

Parsley Piert (*Alchemilla arvensis*, Scop.).—The habitat of this plant is fields, dry pastures, waste places, cornfields. The habit is prostrate, or ascending, with hairy, branched stems, and leaves wedge-shaped below, or fan-shaped, divided into three nearly to the base. The stipules or leaf-like organs are palmate, with lobes spreading from a common point. The yellowish-green flowers are in the axils and stalkless, and are hidden by the stipules. The calyx is 4-lobed. There are 1-3 achenes. The plant is small, 2-5 in. in height, flowering in May up till August, and is a herbaceous annual.

ORDER CRASSULACEÆ

Mossy Tillæa (*Tillæa muscosa*, L.).—The habitat of this plant is barren sandy heaths in the south and east. The plant has the cushion habit, and is prostrate, then ascending, growing in tufts, and is of a red colour. The stems are branched, smooth, with slender branches, leafy, and all bear flowers. The leaves are thick, oblong, opposite, hollow above, blunt or with a short point, united below. The flowers are white with red tips, sessile or stalkless, in the axils, 3-cleft. The parts of the flower are rarely in fours. The sepals are ovate, with a long, narrow point, acute, and green. The petals are small, awl-like. There are no scales. The follicle is constricted, and

BRITISH FLORA

2-seeded. The plant is 1-2 in. high, and flowers in June and July. It is an annual.

ORDER LYTHRACEÆ

Water Purslane (*Peplis Portula*, L.).—The habitat of this plant is wet heathy places, the margin of ponds, damp places. The habit is creeping. The stem is long, creeping. The plant is devoid of hairs, branched, tufted. The stems are 4-angled, creeping, fragile. The leaves are opposite, shortly-stalked, inversely ovate. The flowers are small, solitary, purple, axillary. The petals are often absent. The tube of the calyx is short, shortly bell-shaped, not so long as the capsule, 12-ribbed. The teeth are triangular. There are 6 or 12 stamens. The capsule is rounded. The plant is 3-8 in. in height, flowering from July to August, and is a herbaceous perennial.

ORDER CORNACEÆ

Dwarf Cornel (*Cornus suecica*, L.).—The habitat of this species is moist alpine moors. The plant is prostrate, then erect, herbaceous in habit. The rootstock is prostrate, then ascending or subterranean, woody and leafless. The aerial stems are erect, forked above, scaly below, 4-angled. The leaves are few, stalkless, in pairs, oblong or ovate, acute, with 5-7 veins, bluish-green below. The flowers are in terminal umbels, with an involucre of 4 white leaves or bracts, which are acute, petal-like, with few flowers. The flowers are white or dark purple, and very small. The petals and sepals are bent-back. The bracts have purple tips, and serve as petals. The stamens are yellow. The fruit is a drupe, red in colour. The plant is 4-8 in. high, and flowers from July to August, being a herbaceous perennial.

ORDER COMPOSITÆ

Common Erect Cudweed (*Filago germanica*, L.).—The habitat of this plant is dry pastures and banks, where the soil is dry, and it is adapted to these conditions, having erect, reduced leaves, and the whole plant is woolly. The habit is erect, branched above, the stems rigid, cottony. The leaves are oblong, linear. The flowerheads are in the angles of the branches, the florets pale-brown, the heads obscurely 5-angled, 20 or more, in terminal dense clusters. The involucre is yellow at the tip. The fruit is rounded, covered with wart-like projections. The plant is 6 in. to 1½ ft. in height, and flowers in July and August, being a herbaceous annual.

Cudweed (*Filago apiculata*, G. E. Smith).—The habitat of this plant is sandy places. The habit is similar to that of *F. germanica*, but it is taller or branched, and erect. The stem is rigid and cottony. The leaves are blunt, broader, with a small hard point at the tip. The flowerheads are acutely 5-angled, and one or two leaves overtop them. The florets are as in *F. germanica*. The bracts are purple and boat-shaped. The tip of

the involucre is red. The plant is green, not grey, as in the last. The flower smells like Tansy. The fruit is as in the common Erect Cudweed. The plant is 6 in. to 1 ft. in height, and flowers in July and August, being an annual and herbaceous.

Cudweed (*Filago spathulata*, Presl).—The habitat of this plant is dry fields, waysides. The habit is as in the two last, but the stem is short and prostrate, branched from the base, the branches horizontal, the leaves flat, spoon-shaped, and the acute leaves are longer than the 5-angled flowerheads. The involucral bracts are boat-shaped. The tips of the involucre are pale yellow. The florets are not sunk in the wool. The plant is 6 in. to 1 ft. in height, and flowers in July and August, being a herbaceous annual.

French Cudweed (*Filago gallica*, L.).—The habitat of this plant is sandy and dry gravelly fields. The habit is erect, the stem very slender, much branched regularly into 2 forks. The leaves are linear, awl-shaped, and the margin is turned back, as in plants adapted to dry conditions. The plant is grey, and covered with silvery wool. The florets are yellow, in 3-6 stalkless woolly heads in the axils, the leaves exceeding them. The fruit is flattened at the side and covered with wart-like projections. The plant is 6-8 in. in height, and flowers between July and September, being a herbaceous annual.

Jersey Cudweed (*Gnaphalium luteo-album*, L.).—The habitat of this plant is dry places, light soils, where it is sporadic. The habit is prostrate below, then ascending or erect. The whole plant is densely cottony. The stems are numerous and leafy, simple or branched at the base, forming corymbs above. The leaves are linear to oblong, blunt or acute, the margin wavy, woolly both sides, half-clasping, the lower leaves broader at the extremity, the upper narrower, acute. The flowerheads are clustered at the extremity in leafless dense corymbs. The involucre is straw-coloured. The florets are pale-yellow, tinged with red. The scales of the involucre are membranous and transparent. The female ray florets are in many series. The fruit is papillose. The plant is 6-12 in. high, flowering in July and August, and is a herbaceous annual.

Small Fleabane (*Pulicaria vulgaris*, L. = *P. prostrata*, Aschers).—The habitat of this plant is moist sandy places, heaths, and wet places. The habit is erect. The whole plant is downy and glandular. The stem is leafy, much-branched. The leaves are oblong, narrow below, lance-shaped, stalkless, with a few teeth, wavy, somewhat clasping the stem. The flowerheads are more or less solitary, terminal and lateral, hemispherical. The florets are yellow. The ray florets are very short. The ligules are erect and very short. The flower-stalks are short and stout. The involucral bracts are awl-like, glandular to downy. The fruit is round, the outer pappus consists of distinct scales, the pappus hairs are few, dirty-white, and unequal. The plant is 3-18 in. in height, and flowers between August and September. The plant is a herbaceous annual.

Field Southernwood (*Artemisia campestris*, L.).—The habitat of this plant is sandy heaths in the E. of England. The habit is erect. The stems are woody, with ascending branches, grooved, slender, the barren stems tufted. The leaves are twice pinnate, the young leaves being silky. The segments are few, acute with bent-back margins, linear to lance-shaped, with a blunt point. The flowering stems are slender, ascending in flower, smooth and leafy. The flowerheads are numerous, smooth, drooping, in long slender racemes, ovoid, nearly stalkless, the outer flowers only being fertile. The florets are yellow. The receptacle is glabrous. The plant is not aromatic. The involucral bracts are smooth, ovate, with a membranous margin, and purplish. The corolla in the ray florets is dilated below. The fruit is oblong. There is no pappus. The plant is 1-3 ft. high, flowering in August and September. It is a herbaceous perennial.

Tall Heath Groundsel (*Senecio sylvaticus*, L.).—The habitat of this plant is dry banks, pastures, heathy, dry, gravelly places. The habit is erect. The stem is leafy, hairy, branched. The whole plant is sticky and fetid, and glandular, downy. The leaves are deeply divided to the base, downy, the lobes oblong, with unequal teeth. The florets are yellow. The flowerheads form a corymb, and are numerous, spreading, cylindrical, narrow. The involucre is downy. There are few, short, or no outer involucral bracts. The flower-stalks are slender. The ligules are short. The ray is small and turned-back. The fruit is silky, and faintly ribbed. The plant is from 6 in. to 3 ft. in height, and flowers between July and September. It is an annual.

Smooth Cat's Ear (*Hypocheiris glabra*, L.).—The habitat of this plant is sandy ground, dry fields, sandy and gravelly places. The habit is erect, or the rosette habit. The aerial flowering stem is smooth, branched, leafless. The leaves are in a rosette, radical, oblong, toothed, wavy, or divided nearly to the base. The flowers are yellow, the florets equaling the involucre. The fruit is reddish-brown, with dirty-white pappus, longer than the involucre, and the inner fruits only are beaked. The plant is 6-12 in. in height, and flowers from June to August, being a herbaceous annual.

ORDER CAMPANULACEÆ

Acrid Lobelia (*Lobelia urens*, L.).—This species is found on heaths. The habit is erect. The plant is downy. The stem is slender, leafy, angular, rough. The radical leaves are inversely ovate or oblong, spoon-shaped, blunt, with a few wavy teeth, the upper leaves are stalkless, lance-shaped to linear, running down the stem. The flowers are blue or purple, erect or spreading, in terminal, loose, simple racemes. The lobes of the calyx are nearly equal, awl-like, not so long as the tube. The corolla-lobes are also nearly equal, lance-shaped, acute. The fruit is a 2-3-valved capsule. The plant is 9-24 in. in height, and flowers in August and September. It is a herbaceous perennial.

ORDER VACCINIACEÆ

Cowberry (*Vaccinium Vitis-idaea*, L.).—The habitat of this plant is mountain heaths and woods. The plant has the shrub habit. The stem is prostrate, then ascending, with downy, trailing or ascending branches, and is woody, wiry, twisted, branched, naked below. The leaves are evergreen, dark-green above, glandular, dotted below, inversely ovate, with the margins rolled back as in other xerophytes, adapted to drought. The margins are entire, thick, blunt-toothed, or scalloped, the leaves in 2 rows, leathery, pale below. The veins are not net-like. The flowers are pale-pink, in racemes, short and terminal, drooping. They are crowded and borne on ultimate flower-stalks with 2 bracteoles. The calyx-tube is hemispherical, with 4 broadly-ovate lobes, fringed with hairs. The corolla is bell-shaped, 4-cleft, the lobes linear to oblong. The berries are round, dark-red, and acrid. The stamens project, with purple downy anther-stalks, and the yellow anthers have no awns. The plant is 6-18 in. in height, flowering from June to August, and is an evergreen shrub.

ORDER ERICACEÆ

Red Bearberry (*Arctostaphylos Uva-ursi*, Spreng.).—This plant is a native, and found on heathy, rocky mountains, Scottish heaths, dry stony mountain heaths. The plant has the shrub habit. The stem is prostrate, then ascending, trailing, with stout, woody branches, the young branches downy. The bark is dark, forming scales. The leaves are shining, evergreen, leathery, rigid, deep-green, inversely ovate or spoon-shaped, entire. The margin is woolly, the veins netted above and below. The flowers are few, 4-6, pink, in close, terminal, drooping clusters, crowded, short, smooth. There are persistent scales and bracteoles, fringed with hairs. The ultimate flower-stalks are very short. The calyx-lobes are short and broad. The corolla is pitcher-shaped, with 4-5 lobes, hairy within. The anthers have long awns. The fruit is a berry or drupe, red, round. The plant is 4-24 in. in height. It flowers in May, June, and July. It is an evergreen shrub.

Ciliate Heath (*Erica ciliaris*, L.).—The habitat of this plant is sandy heaths in the S.W. of England. The plant has the heath habit. The stem is long, slender, straggling, with many erect, downy branches, the flowering branches long. The leaves are in whorls of 4 (or 3), close, nearly stalkless, ovate, downy above, bluish-green below, with small scales, and the margins bent-back, fringed with hairs (hence *ciliaris*). The flowers are crimson, in terminal one-sided racemes, inclined on very short ultimate stalks, with bracteoles in the middle. The sepals are downy, fringed with hairs (hence, too, *ciliaris*), ovate. The mouth of the curved, oblong or ovoid corolla is oblique, and small. The style projects. The anthers are included, and have no appendages or awns. The ovary is smooth, ascending. The

plant is 1-1½ ft. in height, and flowers between June and September. It is a perennial shrub.

Cornish Heath (*Erica vagans*, L.).—The habitat of this plant is heaths. As in the case of the other heaths the plant has the shrub habit. The stem is hairless, stout, woody, much branched, the branches stiff, erect, tufted, densely leafy. The leaves are smooth, linear, bent-back, 3 or 4-5 in a whorl, the margins rolled-back over the midrib. The flowers are erect, crimson, in closely-clustered racemes, in the axils below the top of the branches, on slender, ultimate flower-stalks. There are bracteoles in the middle of the latter. The sepals are blunt, ovate, fringed with hairs. The corolla is bell-shaped, short, with short lobes. The anthers are divided into two at the tip, half-projecting, and have no awns, being lateral, consisting of 2 cells, swollen below, and are chocolate-coloured or dark-purple. The ovary is smooth. The plant is 1-3 ft. in height, flowering in July and August. It is a perennial shrub.

Irish Heath (*Erica mediterranea*, L., v. *hibernica*, Syme).—The habitat of this species is wet or boggy heaths and mountain bogs. The Irish Heath has the usual heath or shrub habit. The stem is erect, the plant bushy and smooth, with numerous rigid branches, which end in leafy racemes. The leaves are numerous, erect to spreading, 3 or 4 in a whorl, crowded, on short stalks, linear, with margins rolled-back to the midrib, united below to the under-surface, flat above, there being a furrow in the middle below, and decurrent below. The flowers are crimson, in dense, terminal, axillary, drooping racemes. The sepals are ovate to lance-shaped. The corolla is pitcher-shaped, with broad lobes. There are bracteoles above the middle of the ultimate flower-stalks, which are solitary or in pairs. The stamens and style project slightly, and the latter lengthens. The anthers are terminal, have no awns, and are divided above into 2 lobes. The ovary is not clothed with hairs. The plant is 1-3 ft. in height. It flowers early, between March and May. The Irish Heath is a perennial evergreen shrub.

St. Dabeoc's Heath (*Borella cantabrica*, O. Kuntze = *Dabaezia polifolia*, Don).—The habitat of this plant is boggy heaths. The habit is the shrub habit. The stem is at length prostrate, bushy, with scaly bark, the branches slender, hairy, glandular. The leaves are oval, elliptic to ovate, blunt, fringed with hairs, flat, dark-green above, glossy above, silvery white and woolly or cottony below, borne on short stalks, the margins rolled back. The flowers are 5-10, crimson or purple, rarely white, in simple, loose, one-sided, terminal, glandular racemes, drooping, borne on short, stout, curved, ultimate stalks, with leafy bracts. The sepals are ovate to lance-shaped, fringed with hairs. The corolla has 4 short lobes. The anthers are large, arrow-shaped, purple, 2-fid, with flat anther-stalks. The ovary is hairy, glandular. The plant is 1-2 ft. in height, flowering between July and September. It is a perennial shrub.

Blue Heath (*Bryanthus caerulea*, Dip = *Phyllo-*

doce caerulea, Dip = *Menziesia caerulea*, Sm. = *Bryanthus taxifolius*, A. Gray).—The habitat of this plant is healthy moors on Scotch mountains. The plant has the shrub habit. The plant is woody, much-branched, short, the branches tubercled, naked below, hairy above. The leaves are glossy, leathery, rigid, linear, blunt, spreading, shortly-stalked, crowded, the margins turned back, with a few small teeth, channelled above, without hairs. The leaf-stalks are glandular, hairy. The flowers are purplish-blue, few, drooping, in terminal, umbel-like corymbs. The sepals are ovate to lance-shaped, acute, glandular, downy. The corolla is pitcher-shaped, 5-lobed. The flower-stalks are terminal, simple, clustered. The purple anthers are not so long as the anther-stalks, which are not clothed with hairs. The ovary is glandular, downy. The plant is 4-10 in. in height. It flowers in June and July. It is a perennial shrub.

Ledum palustre, L.—The habitat of this plant is heaths. The habit is that of a shrub. The leaves are linear, oblong, blunt, with the margin much bent-back, and with a red felt below, as well as on the young shoots. The flowers are white, in terminal clusters. The corolla is wheel-shaped. The stamens project some length. The plant is 1-2 ft. in height, and flowers in June and July, being a perennial shrub.

Smaller Winter Green (*Pyrola minor*, L.).—This plant is indigenous, found in mossy woods and thickets and heaths. The plant has more or less the rosette habit. The stem is ascending. The leaves usually form rosette, and are numerous, but they may be alternate. They are leathery, round to ovate or oval, with scalloped margin, the blade narrowed to a long leaf-stalk. The flowers are white with a rose tint, borne on a slender scape, in short racemes, and are drooping, round, nearly closed. There are two lance-shaped or awl-like bracteoles. The calyx-lobes are ovate, acute. The petals are concave and close over the stamens. The ultimate flower-stalks are very short. The stamens are bent inwards, and as long as the short style, which is straight, with no ring below the stigma. The style does not lengthen in fruit. The rays of the stigma are large. The capsule is drooping. The plant is 8-12 in. high, flowering in June and July, and is a herbaceous perennial.

ORDER PRIMULACEÆ

Bastard Pimpernel or Chaffweed (*Centunculus minimus*, L.).—This is a native species, and local. The habitat is moist, sandy, damp, turf, gravelly places. The habit is prostrate. The stems are branched below. The leaves are alternate, ovate or lance-shaped, acute, borne on short stalks. The flowers are numerous, stalkless, solitary in the axils, white or pink or pale rose-colour. The sepals are lance-shaped, longer than the corolla, which is erect, 4-fid, very small, and without glands at the base. The capsule is round, opening transversely, many-seeded, the seeds

3-angled. The plant is 1-3 in. in height, and flowers in June and July, being a herbaceous annual.

ORDER GENTIANACEÆ

Least Yellow Gentian (*Cicendia fusilla*, Griseb.).—The habitat of this plant is sandy commons, or waste broken ground, or where the ground has been flooded. The habit is erect. The stems are branched, and numerous. The leaves are narrow, linear to lance-shaped. The flowers are pale-pink. The parts are in fours or fives. The flower-stalks are slender. The calyx-lobes are erect, awl-like, closely appressed. The corolla-segments are blunt-pointed, half as long as the tube. The stigma is 2-lobed. The capsule is spindle-shaped. The plant is 1-4 in. in height. It flowers late in August and September, and is a herbaceous annual.

Marsh Gentian (*Gentiana Pneumonanthe*, L.)—The habitat of this plant is moist heaths, turf-heaths, and bogs. The habit is erect, or ascending. The stem is slender, scaly below, usually simple, leafy above. The leaves are linear to oblong, blunt, with 1-3 veins. The flowers are few, terminal or axillary, borne on short stalks, large, deep-blue within, with a broad green band down the centre of each lobe. The calyx is inversely conical, has 2 bracts, with 5 linear, blunt, equal segments. The corolla is narrowly bell-shaped, with no hairs in the throat. The capsule is stalked. The plant is 4-18 in. in height. It flowers in August and September, and is a herbaceous perennial.

ORDER CONVOLVULACEÆ

Heath Dodder (*Cuscuta Epithymum*, Murr.).—The habitat is heaths. The plant is a parasite on heath, gorse, &c. The flowers are pale rose-colour. The calyx is reddish, shorter than the corolla tube. The corolla is cylindrical, with spreading lobes, prominent scales nearly closing the tube. The plant is 6 in. to 2 ft. long, flowering in August and September, and is an annual parasite.

ORDER SCROPHULARIACEÆ

Jersey Toadflax (*Linaria Pelisseriana*, Mill.).—The habitat of this plant is heathy places, and the plant is very rare. The habit is erect. The plant has short barren stolons below, with one or more stems from one root. The plant is devoid of hair. The leaves are oblong on the stolons, opposite, and in whorls of 3 or 4, the stem-leaves scattered, linear, blunt, alternate. The sterile branches are radical and prostrate, with ternate, lance-shaped, ovate leaves. The flowers are few, purple, with dark veins in a short raceme, on stalks as long as or less than the bracts. The sepals are linear, awl-like, acute, shorter than the spur, twice as long as the capsule, which is broad and 2-lobed. The seeds are nearly flat. The corolla has a spur parallel to the tube, which is acute, winged,

tuberous on one face. The wing is fringed with teeth. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous annual.

Cut-leaved Speedwell (*Veronica triphyllas*, L.).—The habitat of this plant is sandy fields, dry, bare heaths, and waste places. The habit is erect, or nearly so, the stem rigid, with spreading branches, downy, and glandular. The small leaves are bracts above, cut, the lower stalked, finger-shaped. The flowers are dark-blue, in a raceme with few flowers, somewhat spiked. The calyx is shorter than the flower-stalk. The capsule is many-seeded, the seeds hollow on one side. The plant is 3-8 in. in height, and flowers in May and June, being an annual.

Vernal Speedwell (*Veronica verna*, L.).—The habitat of this plant is sandy fields and bare heaths. The habit is erect, the stem simple or branched below, hairy or downy, and glandular above, as in other heath plants. The leaves are deeply divided to the base, the lower stalked, coarsely toothed, lobed, the upper bract-like, lance-shaped. The flowers are deep blue, with darker lines, the corolla small, the calyx longer than the flower-stalk, the raceme somewhat spiked with many flowers, loose. The capsule is flattened at the margin, fringed with hairs on the keel, inversely heart-shaped, the seeds flat. The plant is 2-4 in. high, flowers in May and June, and is an annual.

Spiked Speedwell (*Veronica spicata*, L.).—The habitat of this plant is dry calcareous places, chalky pastures, chalky heaths. The habit is prostrate, then ascending. The rootstock is creeping. The stem is branched below, stout, leafy. The radical leaves have a wedge-shaped base, being blunt, and are more or less stalkless, toothed above the middle, or scalloped, entire at the end, oblong, leathery. The flowers are borne in a dense spike (hence *spicata*) or terminal raceme, and have ovate to lance-shaped bracts, longer than the blunt sepals, fringed with hairs. The corolla has the tube as broad as long, the throat bearded. The lobes are narrow, acute. The stamens are very long. The anthers are large and purple. The style is long. The capsule is ovate, with a notch and long style, downy, as long as the sepals. The plant is 4-12 in. high, flowering in July and August, and is a herbaceous perennial.

Euphrasia Rostkoviana, Hayne.—The habit of this species is that of a hemi-parasite. The stem is tall, branched below, glandular, the hairs long and scattered. The leaves are plaited, not more than twice as long as broad, finely furrowed, clothed with white bristles, and glandular, the hairs long and wavy. The stem-leaves are ovate, acute, with a short point, the teeth, 6-12, being acute. The floral leaves are broadly ovate, with as many teeth. The spike is long. The flowers are white with violet markings. The calyx is bristly and glandular, with triangular to lance-shaped segments. The tube of the corolla lengthens after flowering, the upper lip having the lobes turned back, notched or divided into two. The fruit is elliptical, notched, fringed with hairs, and

clothed with silky hair, not much longer than the calyx.

Euphrasia Vigursii, Davey.—This species has been referred to *E. officinalis* var. *minor*, Gaud., fil. *rectipila*, Williams, by F. N. Williams (*Prod.*, p. 303). It differs in the smaller flowers, darker shade of the corolla, less hairy leaves, more slender habit. There are no long-pointed hairs tipped with glands on the upper part of the stem.

Euphrasia brevipila, Born. et Gren. (= *Euphrasia stricta*, Host.).—The habitat of this plant is pastures. It belongs to a group with small flowers, with leaves not more than twice as long as broad. After the flower opens the tube of the corolla does not lengthen, being 6–10 mm. long, and therefore adapted to short-lipped insects. The stem is branched at the base, and without glands. The leaves are almost devoid of hair, or with a few short and glandular hairs. The stem-leaves are ovate to oblong, acute or blunt, the teeth, 6–10, blunt, acute, or awned. The spike lengthens in fruit. The bracts are ovate, the base short and wedge-shaped, broader than, and not so long as, the stem-leaves, with 8–14 awned or pointed teeth. The flowers are pale-violet, blue, or white. The calyx has short glandular hairs and triangular lance-shaped teeth. The corolla is large, the upper lip having notched lobes, or the lobes may be entire or toothed. The fruit is oblong or wedge-shaped to inversely ovate, blunt or notched, longer than the calyx.

Euphrasia Kernerii, Wettst.—The habitat of this plant is chalky and calcareous pastures, limestone areas in central and S. England. The northern limit is Derbyshire. The stem is without glands. It is usually branched at the base. The leaves possess no glands, but have small bristles on the margins and veins. The stem-leaves are ovate to elliptic, acute, with 8–14 teeth, which are triangular to acute. The flowers are white, with purple stripes. The spike lengthens. The bracts are oval, acute, and have 6–12 pointed teeth. There are no glands on the calyx, and the teeth are rough, lance-shaped, and pointed. The corolla is large, and longer than the calyx at length, the upper lip being sometimes of a violet colour, with the lobes turned-back and divided into two. The fruit is oblong, inversely ovate, notched, fringed with hairs, with soft hair.

Euphrasia minima, Gaud. (= *Euphrasia borealis*, Wettst.).—The difference between the two plants lies in the more softly hairy character of the one under description, the capsule also equalling the calyx, or it may be shorter. The stem is simple, stout, sometimes branched below, without glands. The leaves are erect to spreading, more or less without hairs, or stiffly hairy. The stem-leaves are ovate, blunt. There are 6–10 blunt or acute teeth. The spike is dense. The bracts are broadly ovate, with 6–10 acute, shortly-awned, or blunt teeth. The flowers are white or violet. The calyx is devoid of hairs, with triangular to lance-shaped teeth. The corolla is large, with a violet upper lip, and the lower white, the lobes of the upper lip turned-back, notched or toothed. The capsule is

elliptic or oblong, narrow below, notched, fringed with hairs.

Euphrasia gracilis, Fries.—Mr. Williams considers that this is the most marked species of the genus. "Its slender, erect form, small leaves and flowers, and usually dark-coloured stem and leaves are very marked characters." The stem is straight, slender, simple, sometimes branched in the middle. The leaves are small, shorter than the internodes, and are green or red, with few short hairs above and on the veins below. The stem-leaves are ovate, often wedge-shaped below, acute, with 6–8 acute teeth. The spike lengthens. The flowers vary in colour, as above, being white with blue lines, blue, or violet. The bracts are ovate or wedge-shaped below, with 6–10 awned teeth. The calyx is smooth, inflated, with lance-shaped teeth with a long point. The corolla is small, the upper lip having entire or faintly-toothed lobes. The capsule is linear to elliptic, blunt or notched, fringed with hairs.

Euphrasia curta, Wettst.—Mr. F. N. Williams considers (*ibid*) that this plant is only distinguished from *E. nemorosa* in height, the dense soft hair, the afterwards slightly-lengthened spike, the size of the capsule (4–5 mm.), which is truncate or very slightly notched at the end. According to Townshend, whose descriptions are in the main followed here (they being based on Wettstein's), the stem is usually stout and branched below, the leaves are greyish-green, rough below, clothed with long bristles, the stem-leaves ovate, acute, with 8–14 acute teeth. The flowers are whitish or pale-lilac or blue. The bracts are sometimes nearly round, with 8–14 acute or shortly-awned teeth. The calyx is clothed with short white hairs on the margins and veins, and is somewhat inflated at length. The corolla is small, the lobes of the upper lip notched or with small teeth. The capsule is wedge-shaped to inversely ovate, blunt or notched, fringed with hairs.

Euphrasia latifolia, Pursh.—By Mr. F. N. Williams this species has been placed under *E. arctica*, Lange. The stem is straight, simple, or slightly branched at or below the middle, with long internodes. The leaves are long, densely clothed with stout white bristles and occasionally glandular hairs. The stem-leaves are few, ovate or wedge-shaped to inversely ovate, blunt, with 4–10 broad, blunt teeth. The spike is dense. The flowers are whitish. The bracts are broadly oval or nearly round, more or less blunt or acute, with a wedge-shaped base, with 6–12 broad, more or less blunt or acute teeth. The calyx has stout white bristles and glandular hairs, with broad acute teeth. The corolla is small, the lobes of the upper lip bent-back, with small teeth. The capsule is elliptic, notched, fringed with hairs.

Euphrasia fennica and *E. suecica* have recently been found in this country.

ORDER OROBANCHACEÆ

Great Broom-rape (*Orobanche major*, L. = *O. Ramum genistæ*, Thunb.).—This plant is a saprophytic

parasite, and the habitat is that of the plants it grows upon, roots of shrubby Papilionaceæ as Gorse and Broom, &c., pastures and heaths, or commons. The stem is erect, brown, stout, leafless. The corolla is dull-yellow, more or less bell-shaped, gaping, only the base remaining after flowering. The stamens are inserted at the base of the tube, and the anther-stalks are hairy above, smooth below. The spike is dense. The upper lip is arched, entire, the lower middle lobe longer than the side lobes. The anthers are white when dry. The stigma consists of 2 distant yellow lobes. The valves of the capsule cohere at each end. The seeds are numerous. The plant is 1-3 ft. in height, and flowers between June and August, being perennial.

Red Thyme Broom-rape (*Orobanchus rubra*, Sm. = *O. alba*, Steph. = *O. Epithymum*, D.C.).—The habitat of this plant is that of Wild Thyme, upon which it is a parasite, or heaths. The habit is that of a parasite. The plant is sweet-scented, and red in colour (hence *rubra*). There are no leaves, and the aerial stem is a scape. The flowers are borne in a loose spike. The sepals are 1-veined, or with a second faint one near the anterior margin, entire, lance-shaped, or awl-like, narrow, longer than the tube of the corolla. The corolla is dull-red, as long as, or shorter than, the bracts, bell-shaped, with a broad, curved tube, with small lobes. The upper nearly entire or notched lip is arched, glandular, downy within. The lips are toothed and crisped. The lateral lobes of the lower lip are nearly equal, and the middle lobe is rather long. The stamens are inserted near the base of the tube. The anthers are brown when dry. The anther-stalks are hairy below, glandular above. The stigma is pale-red, divided into 2 lobes. The plant is 4-9 in. in height, flowering between June and August, and is a herbaceous perennial.

ORDER LABIATAE

Small Pink Skullicap (*Scutellaria minor*, Huds.).—The habitat of this plant is boggy places, moist heaths, swampy heaths, the sides of ditches. The habit of the plant is erect. The stems are slender, sometimes much-branched. The lower leaves are broadly ovate, the intermediate leaves ovate to lance-shaped, the base heart-shaped. The upper leaves are lance-shaped, rounded below, entire, somewhat scalloped below. The leaves are shortly-stalked or stalkless, and blunt. The flowers are in the axils, opposite, turned one way. They are pale-pink in colour. The calyx is downy. The tube of the corolla is straight, and the corolla is small. The nutlets are smooth. The plant is 4-12 in. in height, flowering between July and October. It is a herbaceous perennial.

ORDER ORCHIDACEÆ

Orchis ericetorum, W. R. Linton (= *O. præcox*, Webst.).—This is more slender than *O. maculata*, of which it was regarded at first as a sub-species only (but see below). It is Linnæus's type. The stem

is purple above. The leaves are narrower, more or less bent-back, the lower stem-leaves more or less long and narrow-pointed, keeled, and foisted. The spike is 1-2 in., broadly pyramidal, at length oblong. The bracts are purple. The flowers are pale, not scented, with dark-purple markings, the ground colour commonly white or tinged with pink, but sometimes of deeper colour. The outer line of markings is nearly or quite complete. The honey-gland is slender, slightly enlarged (or not at all) upwards, and the throat is narrow. The lower lip is suborbicular, rounded in outline, rather spreading. The mid-lobe is much smaller than the broad, obliquely blunt or scalloped, lateral lobes, not exceeding them in length, and usually shorter or somewhat bent-back. This is true *O. maculata*, L., as recently defined by Mr. G. C. Druce.

Orchis Fuchsii, Druce.—This plant is found on wet heaths and marshy places. It differs from *O. maculata* (see Vol. II), from which it has recently been separated, in having a longer spike, not pyramidal, and in the form and markings of the lower lip. The leaves are narrower and also less spotted. The plant is taller, 1-1½ ft. high, flowering from June to August, and is a herbaceous perennial.

Orchis O'Kellyi, Druce, has an oblong cylindrical spike. The lip consists of 3 narrow oblong segments. The middle segment is longer than the lateral ones, and becomes gradually narrow-pointed. The leaves are narrow, acute, keeled, unspotted. The flowers are white. The plant is 8-10 in. high, flowering from June to August, and is a herbaceous perennial.

ORDER LILIACEÆ

Grass-leaved Simethis (*Pubilaria planifolia*, Druce = *Simethis bicolor*, Kunth).—This plant was found on Poole Heath, near Bournemouth, which was subsequently planted with firs. The habitat elsewhere is sandy heaths and rocky places. The habit is lily-like. The root consists of stout, fleshy fibres. The stem is inclosed in flat or concave, sheathing scales, surrounded by brown, torn fibres like the leaves. The leaves are flat, linear, keeled, long-pointed, bent-back. The scape is as long as the leaves, branched or forked. The bracts are slender. The flower-stalks are slender and rigid. The flowers are purple, in a corymb. The perianth-segments are oblong, blunt, concave, purple on the back, white within (hence *bicolor*). The capsule is bluntly angular. The seeds are black. The plant is 6-18 in. high, flowering in May and June, and is a herbaceous perennial.

Crow Garlic (*Allium vineale*, L.).—The habitat of this species is fields, pastures, dry places, and waste places. The habit is grass-like, the stem leafy. The bulb is small. The leaves are hollow, adapted to dry conditions and wind, erect, flat, or grooved, round, and become faded when the plant is in flower. The spathe is single, with a long beak, short, the round umbellate heads producing

bulbils, and the leaves may also bear bulbs. The flowers are pale rose-colour or green (replaced by bulbs in var. *compactum*). The tip of the slender flower-stalk is thickened. The anther-stalks are exposed, and the stamens are 3-cleft, the anther-stalks being half as long as the lateral points. The stamens project. The plant is 1-3 ft. in height, and flowers in July, being a herbaceous perennial.

Autumnal Squill (*Scilla autumnalis*, L.)—The habitat of this plant is dry pastures in the S. and W., chiefly near the sea, and rocks. The leaves are autumnal (hence *autumnalis*), appearing after the flowers. Linear, numerous, narrow, half-rounded, grooved above. There are no bracts. The scapes are numerous, as long as the leaves. The flowers are pale-blue, with a green line down the back, in a short raceme, on ascending or spreading stalks. The anthers are purple. The capsule is small. The plant is 4-6 in. high, flowering from July to September, and is a herbaceous perennial.

ORDER JUNCACEÆ

Heath Rush (*Juncus squarrosus*, L.)—The habitat of this plant is moorlands, heaths, wet heaths. The plant has the typical rush habit, and is somewhat tufted. The stem is rigid, erect, simple, flattened, leafless or a scape (the plant in this respect being a rosette plant). The leaves are crowded, numerous, linear, awl-like, channelled, half-round in section, all radical, spreading (hence *squarrosus*), half as long as the stem, bent-back from the keel, finely furrowed. The flowers, 2-3 in a cluster, are pale, solitary, distant, in an irregular, terminal, corymblike cyme, with erect branches. The bracts have a membranous margin, and are not so long as the flowers. The perianth-segments are blunt, as long as the capsule, ovate to lance-shaped, oblong or acute. The anthers are four times as long as the stalks. The capsule is bluntly 3-angled, shining, pale-brown, blunt, with a short blunt point. The plant is 6-12 in. high, and flowers in July and August, being a herbaceous perennial.

Pigmy Rush (*Juncus pygmaeus*, Rich. = *J. mutabilis*, Lam.)—The habitat of this plant is damp spots. The plant has the rush habit. The stems are tufted, pink when dry. They are simple or only once-branched, slender, round, not septate, more or less leafless, very short. The leaves are radical, bristle-like, faintly jointed, channelled, the stem-leaves solitary, auricled below. The flowers are few, 1-5, more or less stalkless, with ovate bracts, in small clusters. The perianth-segments are membranous, linear to lance-shaped, with a long point, not awned, longer than the capsule, 3-nerved, nearly equal. The capsule is oblong to acute. The seeds are spindle-shaped to pear-shaped. They are long and apiculate. The plant is 1-3 in. in height, flowering from May to July, and is a herbaceous annual.

Small Capitate Rush (*Juncus capitatus*, Weig.)—The habitat of this plant is sandy ground, sands

which are inundated in winter, and heathy places. The plant has the rush habit. The stems are bristle-like, rigid, grooved, not septate, naked, erect, and simple. The radical leaves are slender, bristle-like, channelled, with short sheaths. They are half as long as the stems. The flowers are in solitary, terminal heads, with bracts with 2-3 or 2-6 flowers. The outer bracts are bristle-like, twice as long as the flowers, the inner smaller, broadly ovate, cristate. The perianth-segments are elliptic to ovate, unequal, awned, the outer ovate to lance-shaped, long-pointed, twice as long as the capsule. There are 3 stamens. The capsule is broadly ovoid with an abrupt point. The plant is 1-4 in. in height, flowering from May to July, and is a herbaceous annual.

Heath Wood Rush (*Luzula erecta*, Desv. = *L. congesta*, D.C. = *L. multiflorum*, Lej.)—The habitat of this plant is heaths, heathy or wet and turfy places. This species has the usual Wood Rush habit. From the common species this one differs in being larger and stouter. The leaves are linear, hairy. The panicle or cyme consists of numerous, ovate, dense, either stalked or stalkless clusters. The cymes are more contracted, and the flowers more clustered, long, drooping, dark-brown. The perianth-segments are not so broad, being lance-shaped and long-pointed, longer than the capsule. The anther-stalks are more than half as long as the anthers. The anthers are small and short. The capsule is blunt, narrow. The seeds are oblong, about twice as long as broad, with a short appendage below. The plant is 6-18 in. in height, and flowers between April and June. It is a herbaceous perennial.

Pale Wood Rush (*Luzula pallescens*, Bess.)—The habit of this species is tufted. The stems are numerous, erect, slender, with 2-3 leaves, narrow, fringed with hairs or hairless. There are 1-3 bracts longer than the cyme. The cyme may be compound with numerous clusters, with slender, suberect, unequal branches. The central cluster is large and stalkless, the others are small, roundish-oblong or oblong, with 4-20 small flowers. The perianth-segments are pale-yellowish-brown in the centre, the outer ones ovate, long-pointed, a little longer than the fruit, the margin incurved near the apex, the inner shorter, nearly blunt-pointed. The stamens are half as long as the outer perianth-segments, the anther-stalks exceeding the anthers. The fruit is dark-chestnut-brown when ripe, the valves including the beak. The seeds are minute. The plant is distinguished from the last by the difference in size between the inner and outer perianth-segments, and in the lighter colour and pale-greenish-brown perianth-segments. The plant is 6-12 in. in height. It is in flower in May and June, and is a herbaceous perennial.

ORDER NAIADACEÆ

Potamogeton polygonifolius, Pourr. (= *P. oblongus*, Viv.)—The habitat of this plant is pools, ditches, or small streams and ponds, lakes and pools on

heaths. The plant has the pondweed habit. The stem is creeping below. The lower submerged leaves are membranous, linear, lance-shaped, often very narrow. The upper leaves are rather leathery, floating, oblong to elliptic or lance-shaped. All the leaves which are round or heart-shaped below are long-stalked. The leaf-stalks are not jointed, and bear leaves. The blade may run down the leaf-stalk. The spikes are short and irregular. The sepals are elliptic, transversely stalked. The fruit is a drupelet, red, with rounded margins, faintly keeled with lateral ridges. The plant is floating, and flowers in June and July, being a herbaceous perennial.

ORDER CYPERACEÆ

Few-flowered Club Rush (*Scirpus pauciflorus*, Lightf.).—The habitat of this plant is marshes, boggy moors, and heaths. The habit is the usual bulrush habit. There are no leaves. The plant is smaller than the next. The rootstock is creeping, with long stolons. The stem is round in section, finely furrowed, with few scales, thin and narrow. There is a short abrupt sheath below. The upper one is blunt. The lower glume is blunt, not so long as the spikelet. The anthers do not end in an apiculus. The nut is inversely ovate, 3-angled, finely furrowed, netted, pale, with a beak contracted below. The plant is 4-8 in. high, flowering from June to August, and is a herbaceous perennial.

Deer's Head or Tufted Spike Rush (*Scirpus cespitosus*, L.).—The habitat of this plant is barren turf-heaths and moors. The plant has the usual Rush habit. The stems are tufted (hence *cespitosus*), wiry, round in section, finely furrowed, erect, some barren. There is a short rootstock. The scales are overlapping, numerous, leafless, acute. The sheaths are short, awl-like below, the lower split, large, stout, rigid, the upper slender. The leaves are short. The spike is solitary, terminal, ovate, with few flowers. The spikelets are erect, chestnut-brown, shining. The lower 2 glumes are awned, and longer than the spikelet. There are 4-6 bristles. There are 3 long stigmas. The fruit is an oblong to inversely ovate brown nut, with a long narrow point, and a few erect teeth. The plant is 6-12 in. in height, and flowers from June to August. The plant is a herbaceous perennial.

Bristle-stalked Club Rush (*Scirpus setaceus*, L.).—The habitat of this plant is wet, sandy, and gravelly places. The stem is tufted, round, leafy, slender, rigid, round in section. The leaves are 1-2, narrow, channelled, short, bristle-like (hence *setaceus*). The spikelets are 1-3, terminal, small, stalkless, shorter than the lower bract, which appears as a continuation of the stem. The glumes are blunt, with a short point, brown, with white margins and a green keel, ovate. There are 2-3 stamens and 3 stigmas. The nuts are brown, broad, 3-angled, inversely ovate, longitudinally ribbed, and transversely striate. The plant is 3-6 in. in height, flowering in July and August, and is a herbaceous perennial.

***Kobresia caricina*, Willd. (= *K. bipartita*, Dal. Tor.).**—The habitat of this plant is alpine marshes, upland moors. The plant has the sedge habit. The stems are erect, densely tufted, rigid, round in section, leafy below. The rootstock is short. The leaves are wiry, bent-back, slender, not so long as the stem, grooved, the margins twisted. The spikes (4-5) are narrow, close, at the top of the stem, with 6-8 flowers. The spikelets are nearly in 2 rows, stalkless, cylindrical. The bracts are small. The glumes are rigid, ovate to oblong, blunt, pale-brown, the second of the lowest fertile, the lowest barren, the third male. Both flowers are male in the upper spikelets. The nut is pale, linear, with a beak. The plant is 4-8 in. high, flowering in August and September, and is a herbaceous perennial.

Few-flowered Sedge (*Carex pauciflora*, Lightf.).—The habitat of this plant is moors or moorland bogs. The plant has the sedge habit. The rootstock is slender, creeping, with stolons. The stems are 3-angled, smooth, slender. There are 2 to 3 bristle-like leaves, not so long as the stem, which are rolled inwards. The plant is monococious. The terminal flowers are male. There are no bracts. There are 3 stigmas. The glumes are 4-6, distant, oblong to lance-shaped, acute, pale, not so long as the fruit, which is spindle-shaped, pale, and beaked, yellowish-green. The nut is 3-angled, linear to oblong. The plant is 6-9 in. high, flowering in June and July, and is a herbaceous perennial.

***Carex divisa*, Stokes.**—The habitat of this plant is moist shady places, dry hedgebanks. It has been regarded as a sub-species of *C. muricata*. The stems are 3-sided, loose, curved, slender, limp, with rough angles above. The spikelets are distant, loose, drooping, the upper close, greyish, 1 or 2 of the lowest lengthened into a long branch. The bracts are bristle-like. The glumes are blunt, shorter than the fruit. The fruit is ovoid, acute, plano-convex, with a thick green margin, with obscure veins, divided into 2 nearly to the base, smooth, ascending. The beak is rough-edged. The nut is ovoid to oblong, flattened, the beak short. The plant is 1-2 ft. high. It flowers from May to July, and is a herbaceous perennial.

Prickly Sedge (*Carex echinata*, Murr. = *C. stellulata*, Good).—The habitat of this sedge is moors, bogs, and marshes. The habit is that of a sedge. The stem is 3-angled, more or less smooth or rough above, without stolons. The rootstock is densely tufted. The leaves are narrow, channelled, not so long as the stem. The 3-4 spikes are pale-green, round, distant, spreading. The bracts are small, usually at the bottom of the spikes. The glumes are green, with pale-brown sides, ovate, acute. The fruit is olive-green, stalkless, with a round base and stout lateral ribs. The nut is ovoid, narrow below, the glume not so long as the fruit. The plant is 4-12 in. in height, flowering from May to July, and is a herbaceous perennial.

Mountain Sedge (*Carex montana*, L.).—The habitat of this plant is heaths and banks, woods

and fields. It was first found between Tunbridge Wells and Eridge, Sussex, by Mr. Mitten. The plant has the sedge habit. The rootstock is stout and creeping, tufted. The root is fibrous. The plant is slender. The stems are slender, 3-sided, rigid, then curved, roughish above. The leaves are narrow, not so long as the stem, straight, or wavy. The fertile spikes (2-3) are ovate, stalkless, close, reddish-brown. The male spikelets are stout, solitary. The female are few-flowered, slender. The glumes are broad, chestnut-brown, those of the fertile spikes blunt-notched. The bracts are membranous and small, the lowest awl-like. The fruit is oblong, ovate, longer than the glumes. The nut is pale, and borne on a stalk. The plant is 6-15 in. in height, flowering in April and May, and is a herbaceous perennial.

Pill-headed Sedge (*Carex pilulifera*, L.).—The habitat of this plant is heaths, wet heaths, woods, and moors. The plant has the sedge habit. The stems are 3-angled, roughish, long, slender, prostrate at length. The rootstock is tufted. The roots are fibrous. There are no stolons. The leaves form a rosette as a rule, and are broad, short, flat, keeled. The 2-3 fertile spikelets are close, round, stalkless. The bracts are small and awl-like. The male spikes are slender, the female are nearly round. The glumes are brown, spreading, with a green midrib with brown edges, or pale. The fruit is opaque, scarcely 3-angled. The nut is brown, and more or less rounded, with a short, notched beak. The plant is 4-15 in. high, flowering in June and July, and is a herbaceous perennial.

Heath Sedge (*Carex ericetorum*, Poll.).—The habitat of this sedge is dry places, chalk banks. The plant has the sedge habit. The rootstock is branched, creeping, and tufted. The stems are short, curved, stiff, smooth, 3-angled. The leaves are broad, keeled, bent-back. The bract is glutinous, hardly sheathing. The fertile spikelets are few, 1-3, forming a head, 6-10-flowered, small, stalkless, egg-shaped, close. The glume is brown, broadly inversely egg-shaped, blunt, fringed with hairs, the midrib not reaching the top, with membranous margins. The fruit is inversely egg-shaped, downy, as long as the glume, opaque, short. The beak is blunt, entire. The nut is stalkless, inversely egg-shaped, 3-sided, pale, with no terminal disk. The plant is 2-6 in. high, flowering in May to June, and is a herbaceous perennial.

Carex frigida, Sadl. non All. (= *C. Sadleri*, Linton = *C. alpina*, Drej.).—The habitat of this species is wet turf, wet places on Scotch mountains. The habit is the usual sedge habit. The stem is smooth, triangular. The leaves are broad, at first parallel-sided. The bracts are sheathing, leafy. The glumes are dark-brown, acute, cylindrical, long-stalked. The fertile spikes are spindle-shaped, the upper stalkless, the lower drooping at length, long-stalked. There are 1-2 male spikes. The fruit is smooth, lance-shaped, 3-sided, narrowed into a short beak, divided into two. The nut is egg-shaped, 3-angled. The plant is 1-1½ ft. in height, flowering in August, and is a herbaceous perennial.

Yellow Sedge (*Carex flava*, L.).—This is a native plant, found in heaths, bogs, marshes, and wet places. The Yellow Sedge has the usual sedge habit. The rootstock is tufted. There are no stolons. The stems are curved, with acute angles, smooth, 3-angled. The leaves are broad, flat, mainly radical, bent-back, not so long as the stem. The sheaths are short. The bracts are leafy, long. The fertile spikelets are roundish ovate, close. The male are spindle-shaped, the female spreading. The fruit is ovate, ribbed, smooth, inflated, spreading, larger than the glumes. The beak is long, bent downwards. The nut is inversely ovoid, short, 3-angled, with acute angles, olive-brown. The plant is 3-18 in. high, flowering between May and July, and is a herbaceous perennial.

Carex Ederi, Retz.—The habitat of this species is bogs, lake margins, and wet places. The plant has the sedge habit. The plant is smaller than the last, and the beak is rough and more straight. The stem is 3-angled, smooth. The fertile spikes are roundish to ovate, close, the lowest having an included stalk. The bracts are leafy with a short sheath. The glumes are blunt-pointed. The fruit is sub-globose, inflated, ribbed, smooth, suddenly narrowed into an erect or bent-down beak, narrow and rough at the margin. The nut is inversely ovoid, 3-angled, dotted. The plant is 2-4 in. high, flowering between May and July, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Heath Bentgrass (*Agrostis setacea*, Curt.).—The habitat of this plant is dry heaths, and downs in the S.W. The plant has the grass habit. The stem is rigid, rough. The leaves are numerous, short, erect, rigid, bristle-like, with rolled-back margins, roughish, bluish-green. The sheaths are rough. The ligule is oblong, acute. The panicle is oblong, close, with short rough branches, and stalks. The glumes are unequal, acute. The empty glumes are rough, nearly awned. The flowering glume has a longer twisted awn, and two tufts of hairs at the base. The palea is very small. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Vernal Hair Grass (*Aira præcox*, L.).—The habitat of this plant is dry sandy places, pastures, &c., and heathy places. The plant has the grass habit. The leaves are narrow, green, with hairless sheaths. The panicle is close, oval, oblong, spike-like, blunt, narrowed, with short branches. The spikelets are 1-2 on each branch, hardly rounded below, narrow. The flowering glume has the tip divided into 2 nearly to the base; short, the awn from near the base of the palea, from below the middle. The plant is 1-6 in. high, flowering early (hence *præcox*) from April to July, and is a herbaceous annual.

Shining Oat Grass (*Avena pratensis*, L.).—The habitat of this plant is dry grassy places, moors and dry pastures, and mountainous places. The habit is the grass habit. The stem is erect,

roughish above, bent below. The root is fibrous, stoloniferous. The leaves are short, rough, with raised ribs, bluish-green, smooth, narrow, acute, flat or with inrolled margin. The lower sheaths are more or less smooth. The culm is smooth. The panicle is racemose, narrowed after flowering, usually simple, or with only one spikelet. The spikelets are pale, shining. The flowers are erect, 3-6, and exceed the glumes. The flowering glume is rough. The flower-stalk is silky. The awn is slightly bent, as long as the glume. The plant is 1-2 ft. in height, flowering in June and July, and is a herbaceous perennial.

Downy Oat Grass (*Avena pubescens*, Huds.).—The habitat of this grass is dry pastures, chalky and limestone areas. The plant has the grass habit. The stems are not so densely tufted as in the last, and creeping. The leaves are flatter, short, rounded, behind the tip. The radical leaves are hairy. The culm is hairy below (hence *pubescens*). The panicle is erect, simple, the lower branches divided into five. The 2-3 erect flowers are longer than the glumes. The outer palea is jagged. The awns are spreading. The ligule is acute. The plant is 1-2 ft. high, flowering in June and July, and is a herbaceous perennial.

Heath Grass (*Sieglungia decumbens*, Bernh.).—This plant is indigenous, and found on dry pastures, and moors, heaths, rough pastures, and dry places. The plant has the grass habit. The root is fibrous. The plant is prostrate. The stems are densely tufted, rigid, smooth, leafy. The leaves are flat, blunt, leathery, slender, at length inrolled, hairy below. The sheaths are grooved, the lower hairy. The ligule is a tuft of hairs. The panicle is erect, racemose. The spikelets are few, 6-10, turgid, oval, shining, pale-green, purplish. There are about 4 flowers extending beyond the glumes, without awns. The lower palea has 3 points (hence *Triodia*, an older generic name), and is 5-ribbed, and hairy below. The empty glumes are large, ovate, acute, with a rough keel, with membranous margins. The flowering glumes are ovoid, leathery, bearded below. The plant is 6-12 in. high, and flowers in July. It is a herbaceous perennial.

Blue Moor Grass (*Sesleria cærulea*, Ard.).—The habitat of this plant is calcareous pastures and hills, the hilly pastures, limestone districts on rocks, and pastures. The habit is the grass habit. The root is fibrous. The plant is tufted. The stems are erect, smooth. The leaves are narrow, linear, flat, bluish-green above, with a rough tip, blunt, the upper ones very short. The sheaths are flattened and split up into fibres. The ligules are short and fringed with hairs. The panicle is ovate to oblong, bluish-purple, more or less one-sided. The florets are overlapping. The outer palea terminates in 4 teeth, the midrib being rough, ending in a point. There are long linear stigmas. The anthers are tipped with purple. The plant is 6-18 in. high, and flowers between April and June, being a herbaceous perennial.

Purple Moor Grass (*Molinia cærulea*, Mœnch = *M. varia*, Schrank).—The habitat of this grass is moors, wet moors, and wet heaths. The habit is the grass habit. The stems are wiry, round in section, finely furrowed, with a single node below, above naked. The leaves are flat, long, linear, narrow, tufted, rigid, hairy below, the tip slender. There is no ligule. The sheaths are without hairs. The panicle is erect, long and narrow, stout, with a wavy rachis and erect branches, purple (hence *cærulea*). The spike is 1-3-flowered, narrow, purple, the empty glumes acute, the lower palea 3-veined, without an awn. The flowering glumes are deciduous, ovate to lance-shaped. The anthers are violet-brown. The plant is 1-4 ft. in height. It flowers in July and August, and is a herbaceous perennial.

Festuca bromoides, L. (= *F. sciurooides*, Roth).—This grass grows on dry heaths, often where the soil is calcareous. The stem is naked below. The leaves are bristle-like, linear. The upper sheath is far distant. The panicle is erect to spreading, contracted, oblong. The spikelets are arranged one side of the rachis, branched or spiked. The flowering glumes are awned, the glumes somewhat unequal. The plant is 4 in. to 2 ft. in height. It flowers from June to August, and is a herbaceous annual.

FLOWERS OF THE ROCKS AND WALLS, SANDY AND GRAVELLY PLACES

[Rupestrial plants are essentially plants that grow on shallow soils, or in the clefts and crevices of rocks. A large number are found in hilly regions, chiefly in the west of England, or in Scotland and Ireland. This section therefore is to some extent similar to Section VII, but in the latter case the soil is usually less shallow. Many of these plants are alpine arctic types; a large number grow on the borders of rills or wet rocks. The flora of a wall is artificial, but many plants have adopted this habit, being native on rocks. Sandy and gravelly places are more akin to walls and rocks than fields or hills and dry places, and some plants are therefore included here that might be placed in either of the latter.]

ORDER RANUNCULACEÆ

Thalictrum Kochii, Fr.—This plant was formerly regarded as a variety of *T. minus*. It is a local species. The habitat is wet rocks. The plant has spreading stipules with horizontal auricles. The stem is leafy below, tall. The leaf-stalks have spreading branches. The achenes are egg-shaped. The stem is 2-4 ft. high, and this Meadow Rue flowers in July and August, and is a herbaceous perennial.

Globe-flower (*Trollius europaeus*, L.).—The habitat of this plant is subalpine damp mountain pastures, stream-sides, damp meadows, mountain waterfalls, wet rocks on mountains, copses. The habit is erect. The rootstock is short, crowned with rigid fibres. The stem is hairless, simple, leafy. The radical leaves are stalked, nearly round, divided into 5 lobes radiating from the centre, the lobes rhomboidal, wedge-shaped, divided, lobes cut, toothed, the stem-leaves stalkless, not so large. The flowers are globular (hence Globe-flower), bright-yellow. The 10 petals are ligulate, oblong, as long as the stamens. The sepals are 10-15, golden-yellow, round, hollow, forming a globe. The stamens are short. The follicles are transversely wrinkled, keeled, beaked. The seeds are 3-angled, shining, smooth, black, and dotted. The plant is 1-2½ ft. high, flowering in June and July, and is a herbaceous perennial.

ORDER PAPAVERACEÆ

Yellow Welsh Poppy (*Meconopsis cambrica*, Vig.).—The habitat of this Poppy is moist glens, damp rocky places, shady spots. The plant has the rosette habit. There are no hairs on the stem or leaves. There is a stout, thick, branched and tufted rootstock. The roots are thick. The stem is woolly at the base, many-flowered. The leaves are pinnate, with segments deeply divided nearly to the base, distinct or decurrent, and are long-stalked, bluish-green below. The flowers are

yellow, large, borne on long stalks. The sepals are hairy. The petals are rounded. The style is short, the stigma pin-headed, with 4-6 rays. The capsule is 4-6 valved, ribbed, smooth, elliptic to oblong, beaked. The seeds are black or brown, netted. The plant is 1-2 feet high, flowering from June to August, and is a herbaceous perennial.

ORDER CRUCIFERÆ

Alpine Rock Cress (*Arabis alpina*, L.).—This plant has the rosette habit. The rootstock is stoloniferous. The barren shoots are prostrate. The stem is smooth or hairy. The hairs on the leaves are 3-4-forked. The radical leaves are oblong, blunt, stalkless, or narrowed into the leaf-stalk, which is short and winged. The stem-leaves are lance-shaped, oblong, auricled, spreading, with irregular teeth, and some secondary teeth. The outer sepals are gibbous below. The flowers are white, the petals large, twice as long as the sepals. The pods are spreading or curved upwards, broad, blunt. The seeds are round to oval, with a narrow membranous wing. The plant is 4-9 in. high, flowering in July and August, and is a herbaceous perennial.

Rock Cress (*Arabis petraea*, Lam.).—The habitat of this plant is alps, moist rocks. The plant has the rosette habit. The stem is erect or prostrate, smooth, hairy, branched below. The leaves are stalked, the radical leaves lyrate, or deeply divided nearly to the base, long-stalked, oblong to ovate, the stem-leaves nearly entire. The segments are short. The leaves are smooth, or have forked hairs. The flowers are large, white or purplish, in a corymb. The petals have a broad claw, and are spreading. The pods are spreading, with 3-nerved valves, slender, straight. The seeds are oblong, with a terminal, straight, indistinct wing. The plant is 3-8 in. high, flowering in July and August, and is a herbaceous perennial.

Bristol Rock Cress (*Arabis stricta*, Huds.=*A. scabra*, All.).—The habitat of this plant is cal-

careous rocks, limestone cliffs. The plant has the rosette habit. The plant bears stiff hairs below. The stems are erect or ascending. The radical leaves are more or less narrowed into a stalk, small, blunt, deep-green, fringed with forked and simple hairs, lobed or toothed, the lobes oblong or triangular. The stem-leaves are few, stalkless, half-clasping. The flowers are white or cream-colour, rather large. The petals are narrow, wedge-shaped, nearly erect. The style is short. The pods are few, distant, nearly erect, or spreading, straight, three to six times as long as the stalks. The valves are 1-nerved. The seeds are oblong, winged at the tip. The plant is 4-9 in. high, flowering in April and May, and is a herbaceous perennial.

Fringed Rock Cress (*Arabis ciliata*, Br.).—The habitat of this plant is walls, banks, rocky sea-shores in Ireland. It is a local species. The plant has the rosette habit. The plant is smooth or fringed with hairs. The stem is erect. The leaves are inversely ovate, smooth or hairy, or fringed with hairs, toothed, nearly stalkless. The stem-leaves are stalkless, rounded below, elliptic. The flowers are white. The pods are few, broad, erect, straight. The seeds are not winged, and are close. The plant is 4-6 in. high, flowering in July and August, and is a herbaceous biennial.

Tower Mustard (*Arabis glabra*, Bernh. = *Turritis glabra*, L. = *A. perfoliata*, Lam.).—The habitat of this plant is dry banks, cliffs, dry rocky places S. of Perth, and Ireland (Antrim). The habit is erect. The stem is straight. The plant is nearly smooth, or with few spreading hairs, bluish-green. The radical leaves are stalked, inversely ovate, lobed, hairy, soon withering. The stem-leaves are clasping, entire, auricled, smooth. The flowers are pale-yellow, the petals erect. The style is short. The pods are numerous, crowded, slender, erect, on slender stalks. The seeds are in 2 rows, very small, oblong, angled. The plant is 1-3 ft. high, flowering in May to July, and is a herbaceous biennial.

Tower Cress (*Arabis Turrita*, L.).—This plant has been found on walls at Oxford, Cambridge, and is naturalized on castle walls, Cleish, Kinross, &c. It was first noticed in the vicinity of botanic gardens, from which it was originally doubtless an escape. The habit is erect. The plant is stellately downy. The stems are robust, leafy. The radical leaves are stalked, entire, on the barren branches of the rootstock. They are entire, stellately hairy, toothed, elliptic, narrowed into a stalk, the stem-leaves heart-shaped, clasping, long, narrow. The flowers are pale-yellow, and bear bracts. The petals are inversely ovate, lance-shaped, spreading. The pods are flat, with a thick margin, bent-back on the erect stalk, with no central vein, but numerous, marked, netted veins running longitudinally, large, long, on one side of the stalk, with thick valves. The seeds are oblong, with a membranous wing. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Yellow Whitlow Grass (*Draba aizoides*, L.).—

The habitat of this plant is rocks and walls. The plant has the rosette or cushion habit, being densely tufted. The leaves are all radical, the aerial stems being smooth scapes. The leaves are linear, rigid, fringed with hairs, shining, keeled, the margins and tip white, cartilaginous. The scape is rigid. The flowers are golden or bright yellow at first, then white, in short racemes, elongated in fruit. The petals are scarcely notched. The stamens are as long as the petals. The style is as long as the pouch is broad. The pods are oblong, smooth, acute. There are 10-12 seeds in each cell. The plant is 2-5 in. high, flowering from March to May, and is a herbaceous perennial.

Highland Whitlow Grass (*Draba rupestris*, Br.).—The habitat of this plant is alpine, mountain rocks. The plant has the rosette habit. The rootstock is slender. The stem or scape bears few leaves, and is very short, branched, each stem bearing a dense tuft of leaves and 1-3 short scapes. The radical leaves are stellately downy, oblong, lance-shaped, flat, nearly entire, tufted, toothed, fringed with hairs. The scapes are 1-3, slender, wavy, the leaves stalkless, stellately downy. The flowers are white, few, small. The petals are slightly notched. The stamens are not so long as the petals. The style is short. The pods are small, straight, oval, oblong, blunt, hairy, on straight stalks, which are erect to spreading. The plant is 1-2 in. high, flowering in June and July, and is a herbaceous perennial.

Twisted Pod Whitlow Grass (*Draba incana*, L.).—The habitat of this species is alpine mountain rocks and sea-coasts (sand-hills). The habit is the rosette habit. The stems are erect, stellately hairy, simple or branched. The rootstock is often woody and long. The radical leaves are lance-shaped, oblong, toothed, spreading, forming a dense rosette, stellately downy. The stem-leaves are few, clasping, more or less erect. The flowers are numerous, white, in a long raceme, on short stalks. The petals are twice as long as the calyx. The style is short. The pods are linear, oblong, lance-shaped, twisted, longer than the stalks, which are erect to spreading, smooth or nearly so, blunt or acute, variable. The seeds are numerous. The plant is 2-20 in. high, flowering in June and July, and is a herbaceous perennial.

Small Whitlow Grass (*Draba muralis*, L.).—The habitat of this plant is limestone rocks and walls, hills. The habit is the rosette habit. The rootstock is slender. The stems are slender, wavy, leafy, branched, more or less erect or prostrate, stellately hairy. The radical leaves are narrowed below, small, inversely ovate. The stem-leaves are broadly ovate, heart-shaped, blunt, coarsely toothed, few, distant, clasping, hairy. The flowers are white, on spreading horizontal stalks, in short racemes, longer in fruit. The petals are notched, and are very small. The pods are smooth, flat, blunt, linear to oblong, horizontal, the stalks longer. There is no style. The seeds are very small, 10-12. The plant is 4-12 in. high,

flowering in April and May, and is a herbaceous annual or biennial.

Whitlow Grass (*Erophila praecox*, Stev. = *E. brachycarpa* (Ord.), D.C.).—The habitat of this species is walls and dry places. From *E. verna* it differs in the flattened pods, which are inversely ovate to oblong, rounded, one to one-and-a-half times as long as broad. The cells contain 12-20 seeds. The flowers are white. The plant is 1-4 in. high, flowering from March to June, and is a herbaceous perennial.

Erophila inflata, Wats., Hook. fil.—The habitat of this plant is mountain rocks, and the plant is rare. The pods are turgid, round in section, ovoid to oblong, twice as long as broad, and the cells contain 20-40 seeds. The flowers are white. The plant is 1-3 in. high, flowering from March to July, and is a herbaceous annual.

E. virescens, Jord.—In this plant the hairs are all or nearly all simple. The stem is slender, suberect, flexuous, short. The leaves are more or less narrow lance-shaped, oblong or ovate. The sepals are clear-green, the silicles 4×2 cm., the style longer, the plant 6-7 cm.

Thale Cress (*Sisymbrium Thalianum*, J. Gray = *Arabis Thaliana*, L.).—The habitat of this plant is dry soils, hedgebanks, cultivated ground, walls, &c. It is a native of wood borders, stream banks, rocks, and woods. The plant has the rosette habit. The stems are slender, leafless or nearly so, much-branched. The leaves are mainly radical, entire, toothed, downy, oblong, lance-shaped, stalked, the stem-leaves narrow, stalkless, entire or toothed. The flowers are small, white, on slender, spreading stalks. The pods are spreading or ascending, slender, curved, bluntly 4-angled, linear, twice as long as the stalks, not convex dorsally, the lateral longitudinal veins obscure. The seeds are very small, oblong, not furrowed. The plant is 6 in. to 1 ft. high, flowering from May to September, and is a herbaceous annual.

Wall Rocket (*Diplotaxis muralis*, D.C.).—The habitat of this plant is waste places, limestone rocks, and walls. The plant has the rosette habit. The stem is simple, leafless, hairy. The leaves are hairless, long-stalked, wavy or divided nearly to the base, egg-shaped, lance-shaped, blunt. The scapes are slender, ascending. The flowers are yellow, on stalks of the same length, the petals 2-3 times as long as the sepals, inversely egg-shaped, notched or abrupt, roundish, with a short claw. The style is not narrowed below, stout, straight. The pods are slender, narrowed at the top only, the valves flat, nerveless. The seeds are in two rows (hence *Diplotaxis*). The plant is 6-18 in. high, flowering between June and September, and is a herbaceous annual or biennial.

Narrow-leaved Pepper Cress (*Lepidium ruderale*, L.).—The habitat of this plant is waste places, chiefly near the sea, and it is scarcely wild except along the coast. The habit is erect or prostrate. The plant is smooth or slightly downy. The radical leaves, which soon wither, are much divided, bipinnatifid, with narrow lobes. The upper stem-leaves

are linear, entire. The flowers are in terminal and lateral corymbs, small, white, sometimes apetalous. There are 2 stamens. The style is short. The pods are oval, narrowed at the end, flat, with a wing, the valves keeled. The seeds are flattened. The plant is 6-12 in. high, flowering from May to July, and is a herbaceous annual.

Perfoliate Penny Cress (*Thlaspi perfoliatum*, L.).—The habitat of this plant is calcareous places, on limestone. The habit is erect. The stems are branched above, forming a panicle. The branches are ascending, wavy. The stem-leaves are deeply heart-shaped, oblong, with auricles which meet together, and smooth, bluish-green. The radical leaves are spoon-shaped, stalked. The flowers are white, in a raceme or corymb, longer in fruit. The style is very short, included within the notch. The pods are small, inversely heart-shaped, horizontal, like the stalks, the valves broadly winged above, turgid, the marginal nerve short. The seeds are 4-6 in a cell, pale, smooth. The plant is 3-8 in. high, flowering in April and May, and is a herbaceous annual.

Alpine Penny Cress (*Thlaspi alpestre*, L.).—The habitat of this plant is mountain pastures, stony places. The habit is erect. The radical leaves are long-stalked, inversely ovate, entire. The stem-leaves are arrow-shaped, narrow, heart-shaped, smooth, and bluish-green. The flowers are white, with a rose tinge, small, in racemes. The style equals the notch. The pods are oblong to inversely ovate, narrowed below, and are curved upwards on spreading stalks, the valves winged above. The marginal nerve is indistinct. The seeds are reddish-brown, smooth, 4-8 in a cell. The plant is 4-15 in. high, flowering from May to October, and is a herbaceous biennial or perennial.

Thlaspi virescens, Jord.—The habitat of this plant is limestone rocks. It differs from the last in having nearly entire leaves. The stem-leaves are oblong, heart-shaped. The flowers are small and white. The style is longer than the notch. The raceme is oval or oblong in fruit. The petals are three times as long as the calyx. The pods are blunt, notched at the tip, with a point (the style), inversely ovate, the notch broad and shallow. The seeds are 4-5 in each cell. The plant is 6-10 in. high, flowering from May to August, and is a herbaceous perennial.

Hutchinsia petrea, Br.—The habitat of this plant is limestone rocks and sand dunes, and about walls. It was planted by Dillenius on the wall of Eltham Churchyard in Kent, and in Mathew Cemetery, York. The habit is prostrate. The stems are smooth or hairy, slender, leafy, branched. The radical leaves have spreading lobes, and are inversely ovate, nearly stalked. The leaves are deeply divided to the base, the segments entire, much-branched from the base. The flowers are in racemes, small, white. The petals are as large as the sepals. The style is distinct. The pods are on horizontal stalks, the raceme loose, long in fruit, the pods blunt both ends. The seeds are pale. The plant is 2-4 in.

high, flowering from March to May, and is a herbaceous annual.

ORDER POLYGALACEÆ

Polygala amara, L.—The habitat of this plant is margins of rills and rocky places. The habit is the rosette habit. The stem is erect. The radical leaves are spoon-shaped, inversely egg-shaped, blunt, the upper oblong to lance-shaped, acute. The flowering stems from the axils of the rosette are simple and short. The flowers are bluish-white, in terminal racemes, the inner sepals oblong, inversely egg-shaped, narrower and longer than the capsule, the nerves simple, or slightly branched, free. The lateral bracts are shorter than the flower-stalks. The capsule is rounded below, notched. The lobes of the aril are nearly equal, blunt, half as long as the seed. The plant is 1-3 in. long, flowering from April to July, and is a herbaceous perennial.

ORDER CARYOPHYLLACEÆ

Wild Carnation or Clove Pink (*Dianthus Caryophyllus*, L.)—The habitat of this plant is old walls, hedges near gardens, old castle walls. The habit is erect. The plant is smooth, bluish-green, stout, much-branched, leafy below. The barren stems are long, prostrate, then ascending, branched. The leaves are channelled above, bent-back, with smooth margins, linear. The flowers are pink, fragrant, in loosely-panicked cymes, solitary. The bracts are inversely ovate, blunt-pointed, $\frac{1}{2}$ - $\frac{1}{3}$ the length of the calyx-tube. The calyx is cylindric, obscurely ribbed, the teeth not fringed with hairs, longer than the capsule. The petals are scalloped, toothed, inversely ovate, smooth, the teeth $\frac{1}{2}$ - $\frac{1}{3}$ the length of the blade. The capsule is ovoid. The seeds are pear-shaped, nearly flat. The plant is 12-18 in. high, flowering in July and August, and is a herbaceous perennial.

Wild Pink (*Dianthus plumarius*, L.)—This plant is semi-naturalized, or an escape on old walls, and a frequent garden plant. The habit is erect. The plant is tufted and branched. The barren stems are prostrate, much-branched, rooting. The leaves are linear, awl-like, acute, 1-nerved, with rough margins. The flowers are fragrant, solitary, in loose cymes, rose or pale-pink, or white, and the lobes of the fringed petals are as long as the blade. The petals are much-divided to the middle, digitate, downy, the central part inversely ovate, entire. The calyx-lobes are round to ovate, blunt-pointed, four times less than the tube, fringed with hairs at the margin. The capsule is longer than the calyx-teeth. The seeds are flat, rounded, with a point one side. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous perennial.

English Catchfly (*Silene anglica*, L.)—This plant is found in sandy places. The habit is erect. The plant is clammy. The leaves are lance-shaped. The flowers are pinkish-white, solitary, axillary, alternate, small, in terminal racemes.

The petals are divided nearly to the base. The plant is 6-24 in. high, flowering from July to September, and is a herbaceous annual.

Moss Campion or Cushion Pink (*Silene acaulis*, L.)—The habitat of this plant is alpine rocks. The plant has the cushion habit, and is densely tufted, branched, bright-green, smooth. The leaves are close, linear, awl-like, fringed with hairs below, channelled above, keeled below. The flowers are rose colour or white, solitary, borne on long smooth stalks, longer in fruit, or nearly stalkless, erect. The calyx is tubular, bell-shaped, smooth, with 10 striae, the teeth oval, blunt, with membranous borders. The petals are crowned, slightly notched. The capsule is twice as long as the calyx, more or less cylindrical, exserted, with 6 teeth. The plant is 1-3 in. high, flowering from May to August, and is a herbaceous perennial.

Spanish Campion (*Silene Otites*, Wibel)—The habitat of this Campion is sandy and gravelly places, fields and roadsides, heathy places, and the plant is considered, with others, to be possibly a member of a steppe flora. The habit is erect, or the rosette habit. The stems are simple, sticky at the base. This may exclude creeping insects from the flowers. The rootstock is woody and branched. The radical leaves are lance-shaped to spoon-shaped, numerous, slender, finely downy. The stem-leaves are small, linear, erect. The flowers are small, yellow or greenish-white, in whorls, in long panicles, with opposite, tufted, racemose, many-whorled branches. The bracts are membranous. The flower-stalks are smooth. The calyx is faintly veined, inversely ovoid, smooth, the teeth blunt. The petals are linear, without scales, undivided, not crowned. The stamens and style project. The capsule is ovoid, and ruptures the calyx, being stalkless. The plant is 4-18 in. high, flowering in June and July, and is a herbaceous perennial.

Viscid Rock Campion (*Lychnis Viscaria*, L.)—The habitat of this species is dry rocks, cliffs, &c. The plant has more or less the rosette habit. The rootstock is woody. The stem is sticky at or below the nodes, smooth between, simple. The radical leaves are lance-shaped, tufted, stalkless. The stem-leaves are small, narrow, stalkless. The leaves are smooth, with a woolly margin below. The flowers are large, rose colour, in narrow panic-like cymes or racemes, whorled, few. The calyx is purple, membranous, tubular, with short acute teeth, not inflated. The petals are notched, crowned, nearly entire, inversely ovate. The scales are short. The capsule is 5-celled at first, broadly ovoid, the carpophore or stalk half the length. The seeds are kidney-shaped, very small, with sharp points. The plant is 12-15 in. high, flowering in June and July, and is a herbaceous perennial.

Alpine Rock Campion (*Lychnis alpina*, L.)—The habitat of this plant is alpine moors and ravines, mountains. The habit is tufted. The rootstock is short, much-branched. The stem is not clammy, simple, hairless. The leaves are

crowded, narrow, linear to lance-shaped, smooth, fringed with hairs at the base. The flowers are small, in compact cymes, slender, rosy, the petals 2-lobed, hardly crowned, with 2 small tubercles, the flowers shortly-stalked. The calyx has faint nerves and rounded teeth. The carpophore is half the length of the capsule. The capsule is 5-celled when young, egg-shaped, the stalk half as long. The seeds are kidney-shaped, very small, with blunt tubercles. The plant is 3-8 in. high, flowering in June and July, and is a herbaceous perennial.

Umbellate Chickweed (*Holosteum umbellatum*, L.).—The habitat of this plant is walls and thatched roofs, dry places. The plant has more or less the rosette habit. The stems are slender, branched below. The radical leaves are stalked, elliptic to oblong, acute. The stem-leaves are few, stalkless, ovate, linear. The flowers are white or pinkish-white, 3-8 in an umbel, few, erect, on downy sticky stalks. The ultimate flower-stalks are erect in flower, turned back in fruit, then erect again. The bracts are small, membranous. The sepals are white, with membranous margins, blunt. The petals are a little longer than the sepals. There are frequently 3 stamens and 3 styles. The capsule is twice as long as the sepals. The plant is 1-5 in. high, flowering in April and May, and is a herbaceous annual.

Alpine Mouse Ear (*Cerastium alpinum*, L. = *C. lanatum*, Lam.).—The habitat of this plant is alpine and subalpine rocks. The habit is prostrate or ascending. The plant is hairy all round. The stems are branched below, then simple, long. The plant has the habit of *C. arvense*, but broader leaves, fewer, larger flowers, and a capsule nearly twice as long as the sepals, on a spreading flower-stalk. The leaves are ovate-oblong, lance-shaped, blunt, downy, covered with long, simple, white hairs. The flowers are white, large, few, in a forked panicle, not so long as the stalks. The sepals are blunt, with membranous margins. The bracts are herbaceous, with more or less membranous margins. The fruit-stalks are obliquely spreading. The capsule is nearly cylindrical, curved at the end. The seeds are tubercled, small. The plant is 3-6 in. high, flowering from June to August, and is a herbaceous perennial.

Arctic Mouse-ear Chickweed (*Cerastium nigrescens*, Edm.).—This plant is very rare, occurring in Unst. The stem is tufted, prostrate, then ascending. The leaves are inversely ovate, densely hairy, dark-green, tinged with purplish-black (hence *nigrescens*). The flowers are white, large. The seeds are wrinkled. The plant is 3-5 in. high, flowering from June to August, and is a herbaceous perennial.

Mountain Mouse-ear Chickweed (*Cerastium cerastoides*, Britton = *C. trigynnum*, Vill. = *C. lapponicum*, Cr.).—The habitat of this plant is lofty alpine and subalpine rills, wet gravelly spots, as Ben Lawers, Ben Nevis. The habit is prostrate. The plant is almost devoid of hairs. The stem is weak, has alternate hairy lines, and is slender, leafless, branched below. The leaves are small,

oblong, lance-shaped, elliptic, distant, blunt, light-green more or less on one side, and sickle-like. The flowers are white, in cymes of 1-3, terminal. The bracts are herbaceous, glandular or smooth, with a broad membranous margin. The sepals are linear to oblong, spreading, 1-nerved. The corolla is large, with petals 2-fid. The stalks are downy. There are 3 styles. The capsule exceeds the sepals. The plant is 3-6 in. high, and flowers in July and August, being a herbaceous perennial.

Mountain Sandwort (*Arenaria hirta*, Wormsk. = *A. rubella*, Hiern = *A. sulcata*, Schlecht.).—The habitat of this plant is rocky tops of Scottish mountains, as the Breadalbane range, Ben Hope, &c. The plant has the rosette or cushion habit. It is looser in habit than the last, yellowish-green or purple. The stems are densely-tufted, many, with short hairs (hence *hirta*). The leaves are limp, awl-like, crowded, blunt, 3-veined. The flowers are white, solitary. The flowering shoots are downy, terminal, with three pairs of leaves. The sepals are acute, 3-veined, ovate, lance-shaped, with a membranous margin. The flower-stalks are 1-flowered. The petals are inversely ovate, lance-shaped, narrow below, shorter than the calyx. There are 4 styles. The valves of the capsules are 3-5. The seeds are rounded. The plant is 1-2 in. high, flowering in July and August, and is a herbaceous perennial.

Bog Sandwort (*Arenaria uliginosa*, Schleicher = *Minuartia stricta*, Hiern).—Bog Sandwort grows on the banks of rills and calcareous bogs. The habit is prostrate or ascending. The stems are loosely tufted, and are ascending, slender, smooth. The leaves are slender, thread-like, without veins, half-round in section, blunt. The flowers are white, 1-3, on slender flower-stalks, the sepals ovate to lance-shaped, acute, when dry 3-veined, the petals oblong, oval, narrowed below, as long as the calyx. The capsule is ovoid. The seeds are kidney-shaped, rough on the disk. The plant is 2-3 in. high, flowering in June and July, and is a herbaceous annual.

Ciliate Sandwort (*Arenaria ciliata*, L.).—The habitat of this plant is limestone cliffs, bare calcareous spots. The habit is prostrate or ascending. The stems are matted, numerous, much-branched, rough, long, downy, with short hairs turned down, when dry angular. The leaves are oblong to spoon-shaped, fringed with hairs (hence *ciliata*), blunt, 1-nerved. The flowers are white, solitary as a rule, with leaf-like bracts. The sepals are oblong to lance-shaped, more or less acute, with membranous borders, with 3 hairy ribs, shorter than the petals. The petals are spoon-shaped, ovate, slightly clawed. The capsule is ovoid, as long as the sepals. The seeds have no aril. The plant is 1-6 in. high or long, flowering from May to August, and is a herbaceous perennial.

Arctic Sandwort (*Arenaria norvegica*, Gunn).—The habitat of this plant is loose barren gravel on serpentine hills, stony places. The plant is almost smooth, with denser, shorter leaves than the last.

The habit is prostrate, then ascending. The plant is not hairy, or sparingly so. The stems are much-branched, short, angular when dry. The leaves are spoon-shaped, inversely ovate, fleshy, not fringed with hairs. The flowers are white, 1-3, terminal. The sepals are ovate, acute, with 3 smooth, faint ribs, not so long as the capsule. The petals are longer than the calyx, ovate, shortly-clawed. The flower-stalks have very short, turned-down hairs. The capsule is oblong, not narrowed above, and the teeth are erect. The seeds are dark-brown, tubercled. The plant is 1-4 in. high, flowering in July and August, and is a herbaceous perennial.

Arenaria gothica, Fr.—The habitat of this plant is bare calcareous places. The habit is prostrate. The stems are much-branched, spreading, slightly hairy. The leaves are ovate, lance-shaped, narrow-pointed, with a slight fringe of hairs below. The flowers are white, 1-3, terminal. The sepals are ovate to lance-shaped, smooth, keeled or obscurely ribbed, not so long as the capsule. The petals are longer than the calyx, with very short hairs, oblong. The capsule is ovoid, narrowed at the top, and opens by the turned-back teeth. The seeds are dark-brown, tubercled. The plant is 1-4 in. high, flowering from May to September, and is a herbaceous perennial.

Annual Pearlwort (*Sagina apetala*, Ard.)—The habitat of this plant is dry banks, wall-tops, bare places. The plant has the rosette habit. It is wiry, slender. The branches are ascending. The stem is prostrate or ascending. The primary and lateral shoots are all flowering. The radical leaves form a rosette, and are fringed with hairs below, blunt-pointed, linear. The upper part of the stem, ultimate flower-stalks, and calyx may be glandular, hairy. The flowers are green, on slender stalks. The petals are very small, inversely wedge-shaped, blunt, or absent (hence *apetala*). The sepals are hooded, spreading at length in a Maltese Cross, blunt, longer than the capsule. The flower-stalks are erect. The central stems lengthen, flower, and with the branches are erect, and do not root. The capsule is conical to ovoid, more or less shield-shaped below, stalked. The plant is 1-10 in. in height, flowering from May to September, and is a herbaceous annual.

Alpine Pearlwort (*Sagina nivalis*, Fr.)—This species grows in rocky places on Scotch mountains. The habit is tufted. The stems are dense, smooth. The flowers are white, on erect stalks. The plant is 1-1½ in. high, flowers in July and August, and is a herbaceous perennial.

Sagina Reuteri, Boiss.—The habitat of this plant is gravel walks, bare places. The habit is prostrate. The stem is much-branched. The flowers are white. The sepals are usually appressed, the tips blunt. The flower-stalks are short, densely glandular. The plant is 1-3 in. high, flowering from May to August, and is a herbaceous annual.

Mountain Pearlwort (*Sagina Linnæi*, Presl = *S. saginoides*, Dalla Torre).—The habitat of this plant is Highland alps, Scotch mountains. The habit is prostrate. The stems are numerous,

slightly rooting, the central short and barren, hairless, with many branches. The leaves are linear, blunt, pointed, hairless. The petals are shorter than the sepals, which are closely pressed, narrow, hairless. The parts of the flower are in fives. The flower-stalks are long, hairless, the tips bent down after flowering, then erect. The styles are not bent back. The capsule is longer than the calyx, the valves narrowed upwards. The plant flowers from June to August, and is a herbaceous perennial.

Boyd's Pearlwort (*Sagina Boydii*, F. B. White).—This very rare species grows on Scottish mountains. The habit is densely tufted. The leaves are dark-green, shiny, fleshy, overlapping, bent back. There are no petals. The parts of the flower are in 5's. The plant is 1-2 in. high. It flowers in June, and is a herbaceous perennial.

Sagina scotica, Druce.—The habit is creeping. The plant grows on Scottish mountains (hence *scotica*). The leaves are blunt, shortly pointed. The flower-stalks are long, smooth. The sepals are 5, elliptic, blunt. The petals are 5, as long as, or nearly as long as the sepals.

ORDER LEGUMINOSÆ

Alpine Mountain Vetch (*Astragalus alpinus*, L.).—The habitat of this plant is lofty Scottish mountains. The habit is prostrate. The stems are slender, hairy. The leaves are as long as the leaf-stalks. The leaflets are elliptic, blunt, 10-12 paired. The stipules are free, ovate, sometimes connected below. The flowers are white and purple, in short, close racemes, few, drooping, or horizontal. The calyx is short. The pods are oblong, pendulous, 1-celled, covered with black hairs, the stalk longer than the calyx, and exserted. The seeds are few. The plant is 2-5 in. high, flowering in June and July, and is a herbaceous perennial.

Purple Oxytropis (*Oxytropis uralensis*, D.C.).—This plant grows on barren soil on Scottish mountains, on the coast mainly. There is no stem. The leaves are shorter than the flower-stalks, silky. The flowers are purple. The plant is 4-9 in. high. It flowers in June and July, and is a herbaceous perennial.

ORDER ROSACEÆ

Alpine Cinquefoil (*Potentilla Salisburgensis*, Haenke = *P. alpestris*, Hall, fil = *P. Crantzii*, Beck, = *P. maculata* = *P. rubens*, Vill. = *P. villosa*, Zimm. = *P. aurea*, I.K.).—The habitat of this plant is rocky alpine ledges, mountains, alpine pastures. The habit is ascending. The plant is related to *P. verna*, of which it may be a large form, with larger, less blunt leaflets, and larger flowers, sometimes spotted. The radical leaves are 5-lobed. The leaflets are inversely ovate, or wedge-shaped, deeply scalloped or toothed above the middle, the teeth unequal, 4 on each side, green below, hairy. The stipules are ovate. The flowers are several, yellow, with orange spots. The outer

BRITISH FLORA

sepals are blunt, oblong, the inner twice as broad, ovate, acute. The achenes are smooth, hairless. The plant is 4-10 in. high, flowering from May to July, and is a herbaceous perennial.

White Welsh Cinquefoil (*Potentilla rupestris*, L.).—The habitat of this plant is calcareous rocks. The habit is erect. The plant is hairy below. The stems are repeatedly forked, branched above. The leaves are pinnate. The radical leaves have 5 leaflets, and are stalked, unequal at the base, those on the stem are few, trifoliate, nearly stalkless, and they are round or oblong or obliquely inversely ovate, wedge-shaped below, irregularly toothed or scalloped. The flowering shoots are annual. The flowers are white. The achenes are smooth, hairless. The plant is 1-2 ft. high, flowering in May and June, and is a herbaceous perennial.

Shrubby Cinquefoil (*Potentilla fruticosa*, L.).—The habitat of this plant is rocky banks by rivers, and calcareous rocky places. The plant has the undershrub habit. The plant is silky, much branched, leafy, the bark flaking. The leaves are oblong, lance-shaped, with lobes each side of a common stalk. The leaflets are 5, oblong, lance-shaped, entire, with rolled-back margins. The stipules are entire. The flowers are large, golden-yellow, in terminal corymbose cymes. The bracteoles are lance-shaped, longer than the egg-shaped calyx-segments. The plant is 2-4 ft. high, flowering in June and July, and is a perennial shrub.

Sibbaldia (*Potentilla Sibbaldi*, Hall, f. = *Sibbaldia procumbens*, Clairv.).—The habitat of this species is Scotch mountains, dry summits, and stony places. The habit is prostrate, then ascending. The plant is hairy and bluish-green. The root-stock is woody, flattened, the branches leafy above. The leaves are downy both sides, trifoliate, the leaflets are wedge-shaped, with 3 teeth at the blunt end, inversely egg-shaped. The flowering stems are in the axils, leafy, ascending. The flowers are orange-yellow, in a terminal close cyme. The petals are small, narrow or absent, lance-shaped. The calyx-segments are lance-shaped, acute. The bracteoles are linear. The pistils and stamens (4-10) are variable. The achenes are hairless. The plant is 2-6 in. high, flowering in July and August, and is a herbaceous perennial.

Alpine Lady's Mantle (*Alchemilla alpina*, L.).—The habitat of this species is mountain streams and rocks. The habit is more or less the rosette habit. The plant is clothed with soft silky hairs, except the upper surface of the leaves. The root-stock is slender and branched. The branches are ascending above, usually simple, the stem slender, ascending. The leaves are finger-shaped, toothed, with 5-7 lobes, separate to the base, oblong, blunt, on slender stalks, the upper stalkless, rounded to kidney-shaped. The leaflets are narrow, oblong to egg-shaped, suddenly long and narrowly pointed, sharply toothed at the apex. The stipules are united at the base, cleft. The flowers are yellowish-green, on short hairy stalks, in inter-

rupted spikes or small lateral and terminal corymbs. The achenes are slightly glandular. The plant is 3-9 in. long, flowering from June to August, and is a herbaceous perennial.

Pyrus minima, Ley.—The habitat of this plant is limestone cliffs. It is a native, and abundant where it occurs, growing up to 1600 ft. Seedlings are frequently produced. It is a small, spreading tree or shrub, with many slender branches. The leaves are linear, oblong, divided slightly to the base, with 3-4 pairs of lobes, deepest at the middle or upper part, the lowest one-third or one-fourth not lobed. The lateral veins are 5-7, forming an acute angle with the midrib, prominent below and grooved above, the underside having a grey felt. The flowers are in loose corymbs, not flat-topped, the petals round, cream-coloured, the calyx erect and prominent, persistent till the fruit is ripe. The fruit is small, globose, bright coral-red, bitter, ripening in August or September. The plant is 10-20 ft. in height, flowering in May and June, and is a deciduous tree.

Pyrus pinnatifida, Ehrh. (= *P. fennica*, Bab.).—The habitat of this plant is mountains and rocky glens. It is a rare species. The plant has the tree habit. The leaves are oblong, toothed, pinnate below, with 1-4 pairs of free leaflets, the base running down the stem, and 1-2 pairs of free lobes, the leaflets and lobes oblong or narrowly elliptic. The underside is grey-felted. The flowers are white, in a corymb. The plant is regarded as a hybrid between *P. Aria* and *P. Aucuparia*. It is tall, flowering in June and July, and is a deciduous tree.

Cotoneaster microphylla, Wall.—This plant is now quite naturalized in N. Wales. The plant is an evergreen shrub, with small, oblong, blunt leaves, which are downy below, glossy above, leathery. The berries are scarlet.

Cotoneaster (*Cotoneaster vulgaris*, Lindl. = *C. integrifolia*, Med.).—The habitat of the Cotoneaster is limestone cliffs. The plant has the shrub habit. The stems are erect, with downy branchlets. The leaves are round below, broadly elliptic to oblong, ovate, densely downy below, entire, smooth above, adapted to cold. They are round or acute at the apex. The leaf-stalk is very short. The stipules have a membranous margin. The flowers are few, pink, in lateral cymes. The ultimate flower-stalks are short, downy, bent-down. The bracts are very small. The calyx is top-shaped, the margins downy, the lobes blunt. The petals are small, persistent. The styles are 3. The fruit is small, round, shining, red, pendulous. The plant is a perennial shrub, flowering in May and June.

ORDER SAXIFRAGACEÆ

Opposite-leaved Saxifrage (*Saxifraga oppositifolia*, L.).—The habitat of this Saxifrage is alpine rocks. The plant has the cushion habit. The stems are tufted, creeping, prostrate then ascending. The leaves are opposite, small, blunt, thickened at the tip, overlapping in 4 rows, ovate,

oblong, fringed with hairs, with stout bristles. The flowers are purple, terminal, bell-shaped, stalkless. The sepals are fringed with hairs, united to the middle, blunt. The petals are inversely ovate. The capsule is free, with awl-like, spreading beaks. The plant is 4-8 in. high, flowering from April to June, and is a herbaceous perennial.

Clustered Alpine Saxifrage (*Saxifraga nivalis*, L.).—The habitat of this species is Highland Alps, mountain cliffs, &c. The habit is erect, and the plant is a rosette plant. The aerial stem is a scape. The rootstock is small. The plant is glandular, hairy on the leaf margins, scape, bracts, and ultimate flower-stalks. The leaves are radical, rather leathery, broadly spoon-shaped, scalloped, toothed, narrowed into the leaf-stalk. The bracts are linear. The flowers are white, in heads or cymes, densely-clustered. The sepals are united below, purplish, adnate to the base of the carpels, the calyx being half-inferior. The petals are not spotted, and are longer than the calyx. The beaks of the capsule are spreading. The plant is 3-6 in. high, flowering in July and August, and is a herbaceous perennial.

Starry Saxifrage (*Saxifraga stellaris*, L.).—The habitat of this Saxifrage is alpine and subalpine rills, damp rocks on mountains. The plant has the rosette habit, and the stems are tufted, but the aerial stems are scapes. The rootstock is branched and small. The plant is hairless, or has but few hairs. The leaves are rather succulent, fringed with hairs, entire, oblong, lance-shaped, wedge-shaped, toothed, narrow below, hardly-stalked. The flowers are few, white, in a loose cyme or corymb. The scape bears no leaves. The sepals are lance-shaped. The petals are clawed, ovate, with two transverse yellow or purple spots below. The anthers and pistils are red. The anther-stalks are awl-like. These serve as honey-guides. The bracts are linear. The beaks of the capsule are slender, nearly erect. The plant is 2-8 in. high, flowering in July and August, and is a herbaceous perennial.

London Pride or St. Patrick's Cabbage (*Saxifraga umbrosa*, L.).—London Pride is an alien in Great Britain. The habit is the rosette habit. The barren shoots are prostrate below. The plant is hairless or loosely hairy. The leaves are rounded, inversely ovate, broad, narrowed into a stout leaf-stalk, coarsely scalloped or toothed, leathery. The leaf-stalk is glandular, flattened, broad. The crenatures are cartilaginous. The flowers are white or pink, in a panicle-like raceme. The flower-stalks are glandular. The scape is without leaves. The sepals are reddish. The anther-stalks are swollen above. The anthers are red. The beaks of the capsule are spreading. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous perennial.

Saxifraga hirsuta, L.—From the last species this one differs in being more hairy (hence *hirsuta*), and in the sharply-toothed leaves, rounded or blunt below. It also resembles *S. Geum*. The leaves are oval, heart-shaped, blunt, sharply-toothed, very hairy, leathery, longer than broad.

The leaf-stalks are linear, half-round in section, with raised edges, tapering upwards. The flowers are rose-colour, in panicle-like racemes. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous perennial.

Yellow Mountain Saxifrage (*Saxifraga aizoides*, L.).—The habitat of this species is stony mountain rills, wet places on mountains. The plant has the rosette or cushion habit. The stems are prostrate below, tufted, leafy, much-branched, bright-green. The leaves are linear, oblong, the lower bent-back, alternate, entire, or with stiff teeth, crowded below, blunt-pointed, scattered on the flowering stems, fringed with hairs, flat above, convex below. The flowers are in a leafy panicle, yellow, with red spots. The sepals are blunt, erect, united below the ovary, the teeth inversely conical. The petals are narrow, distant, not contiguous, inversely ovate to spoon-shaped. The stalks are glandular. The ovary is depressed, orange. The capsule is erect to spreading, with awl-like beaks. The plant is 4-6 in. high, flowering from June to September, and is a herbaceous perennial.

Alpine Brook Saxifrage (*Saxifraga rivularis*, L.).—The habitat of this plant is alpine wet rocks and streams on the coldest parts of mountains. The plant has the rosette or cushion habit. The stems are prostrate or ascending, tufted, slender, rooting, succulent, glandular, hairy. The leaves are radical, kidney-shaped, palmately-lobed, the lobes entire, rounded, 5-lobed, stalked. The leaf-stalk is slender, as long as the stems. The upper leaves are lance-shaped, entire. The flowers are white, few, stalked, erect. The bracts are leafy, opposite, usually entire. The calyx is half-inferior, with acute lobes as long as the tube, hemispherical. The petals are small, distant, inversely ovate to oblong. The capsule has short, spreading beaks. The plant is 1-4 in. high, flowering in July and August, and is a herbaceous perennial.

Drooping Bulbous Saxifrage (*Saxifraga cernua*, L.).—The habitat of this plant is schistose rocks. The plant has the rosette habit. The rootstock has scaly buds at the top. The plant is glandular, hairy, leafy. The stems are erect, simple, 1-flowered. The radical leaves are stalked, kidney-shaped, the lobes palmate, scalloped-lobed, redtinged. The stem-leaves are nearly stalkless, more or less 3-fid, with scarlet buds in the axils, deeply lobed. The flowers are replaced by reddish bulbs, or drooping, bell-shaped, white, and are rarely found in Britain. The calyx-tube is very short, inferior, the lobes erect, blunt. The petals are large, inversely ovate. The plant is 2-4 in. high, flowering in July and August, and is a herbaceous perennial.

Saxifraga caspia, L.—The habitat of this very rare plant is mountains. The plant has the rosette habit. The plant forms dense tufts. The short barren shoots are not longer than the flowering. The plant is clothed with globular, glandular hairs. The radical leaves are crowded, 3-5 lobed, blunt, being fringed, wedge-shaped, the base not furrowed. The flowers are white, 1-5, the calyx-tube longer

than broad, half-inferior, the sepals blunt, short, erect. The ovary is broad, rounded below. The anthers are long, heart-shaped, with an open notch. The capsule has spreading beaks. The plant is 1-4 in. high, flowering in May and June, and is a herbaceous perennial.

Saxifraga granlandica, L.—The stems of this species are viscid, close, forming a thick cushion. The leaves are persistent, deep green. The flowers are white. The anther-stalks turn purple. The plant is a herbaceous perennial, flowering in the summer.

Saxifraga sternbergii, Willd. (= *S. hibernica*, Hard.).—The habitat of this species is mountains. The habit is the rosette habit. The plant is robust. The stems are hairy. The barren shoots are long. The leaves are hairy with 3-5 blunt lobes. The sepals are oblong, ovate, blunt. The plant is 2-8 in. high.

Saxifraga rosacea, Mœnch (= *S. decipiens*, Ehrh.).—The habitat of this plant is mountains. The plant has the cushion habit. The leaves are closely tufted. The barren shoots are long. The plant is pale-green. The lobes of the leaves are acute, 3-5. The sepals are oblong, lance-shaped, more or less acute. The plant is 2-4 in. high.

Saxifraga sponhemica, Gmel. (= *S. quinquefida*, Haw. = *S. hirta*, Donn).—The habitat of this plant is mountains. The plant is rare. The plant has the rosette or cushion habit. The stems are erect, glandular, with few linear leaves. The leaves of the barren shoots are 3-5 lobed, broad-based, fringed with linear-acute lobes, few, 5-cleft. The flowers are white, 2-4. The calyx is half-inferior, deeply divided. The sepals are awl-like, triangular. The petals are oblong, 3-veined. The anthers are half as large as in *C. cespitosa*. The capsule is spreading. The plant is in flower in July, is 1-3 in. high, and a herbaceous perennial.

Mossy Saxifrage (*Saxifraga hypnoides*, L.).—The habitat of this plant is hilly subalpine rocks and mountains. The plant has the cushion or rosette habit. There are buds in the axis of the barren shoots. The flowering stems are stout or slender, leafy, the leaves linear, simple, broad or lobed, erect, the barren shoots long, prostrate, with the leaves entire or 3-cleft. The plant is hairless, or glandular hairy. The plant forms large loose tufts. The leaves are flat or channelled, entire, linear, acute, the radical leaves 3-5 cleft, the leaf-stalk broad with a flattened margin. The flowers are white, few or several, bell-shaped. The sepals are united above the middle. The calyx-tube is short, inversely conical, the calyx half-inferior, the sepals spreading, triangular to awl-like, or egg-shaped, acute. The capsule is not included in the calyx-tube, the beak nearly erect, the horns spreading at an obtuse angle. The plant is 2-12 in. high, flowering from May to July, and is a herbaceous perennial.

ORDER CRASSULACEÆ

Orpine Stone-crop or Roseroot (*Sedum Rhodiola*, D.C. = *S. roseum*, Scop.).—The habitat of this plant

is moist alpine and subalpine rocks, and sea cliffs. The plant has the rosette habit. The rootstock is thick, cylindrical, fleshy, branched, woody, stout, perennial, smelling of roses. The stems are annual, simple, fleshy. The buds are scale-like. The leaves are bluish-green, fleshy, inversely ovate, lance-shaped, alternate, oblong, smooth, above larger and crowded, acute, toothed at the apex. The flowers are yellow or purple, in compact, terminal, corymb-like cymes, the parts in fours. The plant is dioecious. The sepals are narrow. The petals are linear, smaller, or wanting in female flowers. The scales are notched. There are 8 stamens. The plant is 6-18 in. high, flowering from May to August, and is a herbaceous perennial.

White Stone-crop (*Sedum album*, L.).—The habitat of this species is rocks and walls. The plant has the cushion habit. The plant is hairless or slightly glandular. The flowering stems are curved below, then erect; the barren stems are purplish, leafy, prostrate, rooting. The leaves are oblong, blunt, bright-green, alternate, nearly cylindric, narrow below, flat above, spreading. The flowers are white, with petals twice as long as the green sepals, oblong to lance-shaped, in a much-branched panicle, hairless. The plant is 3-5 in. high, flowering in July and August, and is a herbaceous perennial.

Thick-leaved Stone-crop (*Sedum dasypyllyum*, L.).—This plant is not uncommon on old walls and rocks. The plant has the cushion habit. The stems are all prostrate, then ascending, the plant loosely tufted, bluish-green, pink, glandular, downy, much-branched. The flowering-stems are weak, wavy, slender. The barren stems are short, with opposite, rounded or ovoid leaves in a rosette. The leaves are short, fleshy, thick, gibbous, bluish-green, equal below, reddish. The flowers are rose-white, in a small panicle or forked cyme, few, glandular, downy. The sepals, petals, and carpels may be in sixes. The sepals are ovate, blunt, as are the petals, the latter with pink streaks. The plant is 2-3 in. high, flowering in June and July, and is a herbaceous perennial.

Tasteless Mountain Stone-crop (*Sedum sexangulare*, L.).—The habitat of this Stone-crop is old walls in the E. of England, and the plant is very rare. The plant has the cushion habit. It is smooth, with an insipid taste. The stems form a loose tuft, the barren stems having crowded leaves in 6 rows, the flowering-stems looser, spreading or bent back. The leaves are cylindric, linear, blunt, spreading, spurred below, the spurs acute, touching the stem. The flowers are yellow, in a corymb-like cyme, which is smooth and 3-branched. The flowers are more or less stalkless. The sepals are lance-shaped, acute, not gibbous; the petals are lance-shaped, acute. The plant is 3-6 in. high, flowering in July and August, and is a herbaceous perennial.

Crooked Saxifrage or Large Yellow Saxifrage (*Sedum reflexum*, L.).—The habitat of this species is rocks and house-tops, walls. The plant has the rosette habit. It is like the last, but larger. The

leaves are in 6 series, cylindrical, the tips awl-like, crowded on the flowering shoots, bent back, green, convex both sides, spurred below, acute, spreading, numerous. The flowers are yellow in nearly flat-topped cymes, the outer branches bent back or spreading, stalked. The sepals are ovate, acute, not gibbous below, the petals lance-shaped, blunt. The anther-stalks and lateral edges of the carpels have glandular hairs. The plant is 6-12 in. high, flowering in June and July, and is a herbaceous perennial.

Rock Stone-crop (*Sedum rupestre*, L.).—The habitat of this species is limestone rocks (hence *rupestre*). The plant has the rosette habit. The barren stems are short, with densely overlapping, appressed, bluish-green leaves. The plant is smooth. The stems are stout, loosely tufted, green or pink-tinged. The flowering stems have erect, scattered leaves. The leaves are linear, lance-shaped, flat, spurred below. The flowers are yellow, in flat-topped scorpioid, corymb-like cymes. The sepals are oblong, blunt, elliptic. The petals are lance-shaped, acute. The anthers are yellow, the stalks smooth, as are the ovaries. The plant is 6-10 in. high, flowering in June and July, and is a herbaceous perennial.

Small Welsh Stone-crop (*Sedum forsterianum*, Sm.).—The habitat of this species is wet rocks, chiefly in the W. of England. The plant has the rosette habit. It is more slender than *S. rupestre*, of which it has been regarded as a subspecies. The barren stems are short, erect, with crowded leaves, which are lance-shaped, bright, not bluish-green, spurred below, flattened, forming small rose-like tufts. The flowers are yellow, in compact, round-topped cymes. The sepals are ovate, the petals lance-shaped. The anther-stalks and ovaries are smooth. The plant is 6-10 in. high, flowering in June and July, and is a herbaceous perennial.

ORDER ONAGRACEÆ

Mountain or Chickweed Willow-herb (*Epilobium alsinifolium*, Vill.).—The habitat of this species is spongy banks of rills, alpine and sub-alpine districts. The plant is almost devoid of hair. The root is creeping. The stems are tufted, ascending, with 2-4 lines of down. There are yellow summer stolons, which are subterranean, slender, bearing rather round, distant scales, and scaly buds in autumn. The stems are erect, wavy, simple, more or less succulent (hence *alsinifolium*), rooting below. The leaves are opposite as a rule, ovate to narrow-pointed, with bent-back teeth, shortly-stalked, smooth, shining, rather membranous. The flowers are few, large, purple or rose-colour. The buds are bluish, nodding. The sepals are linear to oblong. The capsule is erect, long, long-stalked, nearly smooth. The seeds are narrow, club-shaped. The plant is 4-12 in. in height. It flowers in July, and is a herbaceous perennial.

Alpine Willow-herb (*Epilobium alpinum*, Huds. = *anagallidifolium*, Lam.).—The habitat of this Willow-herb is mountain rills of the higher moun-

tains. The plant has the rosette habit, and is prostrate below. The plant is small, somewhat downy. The summer stolons are subterranean, and form a rosette. The barren stems are short, with close upper leaves; the flowering stems are erect, from a short rooting base, with oval or oblong leaves, blunt, narrow below, not long-pointed. The stem has raised lines of down, and is ascending, slender, simple, curved. The leaves are few, pale-green, short-stalked, the upper lance-shaped, elliptic, blunt, entire or toothed, red-tinted, opposite. The buds are blunt, nodding. The flowers are drooping, pale rose-purple, the sepals linear to lance-shaped, acute. The capsule is nearly hairless, the seeds narrow to inversely egg-shaped, pointed below, with a blunt point. The plant is 2-9 in. high, flowering in July, and is a herbaceous perennial.

ORDER UMBELLIFERÆ

Rigid Hare's Ear or Small Hare's Ear (*Bupleurum opacum*, Lange = *Bupleurum aristatum*, Bartl.).—The habitat of this plant is sandy places and rocks. The habit is rigid, erect, with simple or forked stems, which are solid, the leaves sword-shaped, linear, lance-shaped, finely furrowed. The lower leaves may be stalked. The flowers are yellow, the oblong bracts bearing an awn. The plant is 2-8 in. in height, flowering in June and July, and is an annual.

Honewort (*Trinia vulgaris*, D.C. = *Apinella glauca*, Carmel = *Trinia glauca*, Dum. = *T. glaberrima*, Hoffm.).—The habitat of this plant is dry limestone rocks or hills. The plant is bluish-green. The rootstock is spindle-shaped, woody, crowned with remains of last year's leaves and leaf-stalks. The stems are erect, branched, solid, stout, deeply-grooved, with spreading branches. The leaves are tripinnate, the leaflets linear and slender, spreading, bluish-green. The segments and leaf-stalk are very slender. The plant is dioecious. The flowers are white, minute. The umbels of the male flowers are flattened, those of the female irregular, with longer rays. The bracts are 3-cleft, solitary or absent. The bracteoles are linear, 2-3. The fruit is ovoid, with blunt ridges. The carpophore has flat segments. The styles are slender. The plant is 3-6 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER RUBIACEÆ

English Wall Bedstraw (*Galium anglicum*, Huds.).—The habitat of this plant is walls and dry sandy places. The habit is prostrate. The stems are spreading, branched, slender, brittle. There are no barren shoots. The leaves are 6 in a whorl, or the lower 4 in a whorl, narrow, linear, blunt-pointed, bent-back at length, the margins rough, with forwardly-directed prickles. The flowers are few, greenish-white, in small, forked, axillary and terminal cymes, panicled, with spreading branches, nearly at right angles

to the stalks. The fruit is small, tubercled, black. The plant is 6-12 in. high, flowering in June and July.

Mountain Northern Bedstraw (*Galium boreale*, L.).—The habitat of this plant is moist rocks in mountain districts in North Britain. The habit is erect. The stems are rigid, tufted, leafy, with few branches above. The rootstock is creeping. The plant is smooth to downy, black when dry. The leaves are 4 in a whorl, lance-shaped, smooth, downy, 3-nerved. The flowers are large, white, in terminal and axillary, compact, many-flowered, panicled cymes, the branches more or less erect. The bracts are ovate. The fruit is covered with hooked bristles. The fruit-stalks are erect. The plant is 6-24 in. high, flowering from June to August, and is a herbaceous perennial.

ORDER VALERIANACEÆ

Spur Valerian (*Centranthus ruber*, D.C.).—The habitat of this plant is old walls, cliffs, chalk-pits. The plant is erect in habit. The rootstock is woody below. The stem is round in section, hollow. The radical leaves are lance-shaped, stalked, the upper triangular, ovate to lance-shaped, stalkless, smooth, bluish-green, entire or toothed at the base. The flowers are red or white, in long terminal, panicled cymes, dense, arranged one side, with a slender spur shorter than the tube, twice as long as the ovary. The fruit is rough, narrow, ovoid, flattened. The plant is 1-2 ft. high, flowering from June to September, and is a herbaceous perennial.

ORDER COMPOSITÆ

Goldielocks (*Aster Linosyris*, Bernh.=*Linosyris vulgaris*, Cass.).—The habitat of this plant is limestone rocks, maritime cliffs. The habit is erect. The plant is smooth, herbaceous. The stems are woody below, ribbed, simple, wiry, leafy. The leaves are linear, smooth or rough, entire, single-ribbed, numerous, dotted, acute, thick, narrowed from the base to the middle. The flowerheads are yellow, in terminal, corymbose heads, dense, and hemispherical. The flower-stalk bears bracts, and is slender. The involucle is loose, gummy, downy. The phyllaries are awl-like, shorter than the flowers. The achenes have reddish pappus in 2 rows. The plant is 9-18 in. high, flowering from August to October, and is a herbaceous perennial.

Alpine Fleabane (*Erigeron alpinus*, L.).—The habitat of this plant is alpine rocks, highland mountains. The plant is erect in habit. The rootstock is short. The plant is hairy. The aerial stems are scapes. The leaves are mainly radical, oblong, lance-shaped, narrowed below, spreading. The stem-leaves are few, linear to oblong. The scapes bear 1 or more heads, and are solitary or few. The flowerheads are solitary, with a yellow disk and light purple ray, borne on stout flower-stalks. The ray-florets are numerous, twice as long as the disk, with a very slender ligule, longer

than the pappus. The inner female florets are tubular, numerous, slender. The involucre is hairy. The phyllaries are villous, awl-like to lance-shaped. The pappus is reddish. The plant is 6-8 in. high, flowering in July and August, and is a herbaceous perennial.

Alpine Cudweed (*Gnaphalium norvegicum*, Gunn.).—The habitat of this plant is alpine rocks and highland mountains. The habit is nearly erect. The stems are simple. The leaves are lance-shaped, broader than in the last, woolly both sides. The stem-leaves are blunt-pointed, broad, the floral leaves suddenly smaller, those in the middle of the stem broadest. The flower-heads are in short, close, terminal, nearly stalkless, leafy spikes, longer in proportion to the involucre. The phyllaries are blackish-brown. The fruit is longer, the pappus white. The plant is 6-10 in. in height, and flowers from July to September, being a herbaceous perennial.

Dwarf Alpine Cudweed (*Gnaphalium supinum*, L.).—The habitat of this plant is alpine and sub-alpine rocks, highland mountains. The plant is prostrate in habit. The plant is tufted, leafy, with cottony, appressed wool. The roots are dark-brown, fibrous. The mainly radical leaves are linear, lance-shaped, downy both sides. The scapes are erect, with few linear leaves, downy both sides. The flowerheads are stalkless, few, 1-5, distant, in short terminal spikes or racemes. The phyllaries have a membranous margin, and are brown above, woolly, the outer blunt, the inner acute. The achenes are downy, with white pappus. The plant is 1-4 in. high, flowering in July and August, and is a herbaceous perennial.

Irish Inula (*Inula salicina*, L.).—The habitat of this plant is damp rocky places. The plant is exceedingly rare. The habit is erect. The stem is leafy, softly downy. The leaves are linear to oblong, tuberculate, toothed, fringed with hairs, rigid. The lower leaves are inversely ovate to lance-shaped, smooth above, slightly hairy below, the veins netted with crisped hairs. The stem-leaves are half-clasping, glossy, rough, the margin turned back. The flowerheads are solitary, or 3-5 in a corymb, with yellow florets. The involucral bracts are linear to oblong, fringed with hairs, the outer leafy ones turned back. The ligules are slender. The pappus is dirty white. The fruit is smooth. The plant is 12-18 in. high, flowering in July and August, and is a herbaceous perennial.

Oxford Ragwort (*Senecio squalidus*, L.).—This plant grows on walls, where it is on the increase, and on railway banks, roadsides, and waste ground. The habit is erect. The plant is smooth. The stems are short, stout, leafy, wavy, much-branched. The leaves are stalkless, deeply-divided nearly to the base, or lyrate, the segments linear, oblong, long or short, distant, irregular, toothed, smooth, the upper auricled, and half-clasping. The flowerheads are yellow, broad, in a loose corymb, with spreading rays. The involucle is broadly bell-shaped, smooth, the outer phyllaries are few, small, with dark tips. There are awl-like bracts below the heads. The achenes

are hairy, silky, ribbed. The plant is 1-2 ft. high, flowering from March to September, and is a herbaceous annual or biennial.

Cnicus tuberosus, Roth.—The habitat of this plant is meadows in Württ. It differs from Field Thistle (*C. pratensis*) in not being stoloniferous. The root consists of spindle-shaped tubers. The leaves are deeply divided nearly to the base, another distinction. The lobes are distant, narrow, 2-4-cleft. The flowerheads are 1-3, the involucle ovoid, depressed below. The plant flowers in August and September, and is a herbaceous perennial.

Melancholy Thistle (*Cnicus heterophyllus*, Willd.).—The habitat of this plant is moist mountains, subalpine pastures, and rivulets in North Britain. The habit is creeping, then erect. The plant is stoloniferous, the rootstock creeping, the roots fibrous. The stem is cottony, branched, furrowed, white. The leaves are large, soft, lance-shaped, irregularly lobed, or entire, toothed, fringed with hairs, white below, the radical leaves clasping, stalked, the upper egg-shaped, half-clasping, with a heart-shaped base. The flowerheads are purple, few, large, and handsome, not prickly, included at the base, egg-shaped, blunt, below slightly downy. The phyllaries are egg-shaped or lance-shaped, long-pointed, closely pressed, the inner entire, the outer blunt-pointed. The fruit is small, smooth, brown, with brown pappus. The plant is 2-4 ft. high, flowering from July to September, and is a herbaceous perennial.

Alpine Saw-wort (*Saussurea alpina*, D.C.).—The habitat of this plant is alpine rocks and cliffs. The plant has the rosette habit. The rootstock is short, bearing stolons. The stems are stout, erect, downy or cottony, simple, leafy. The leaves are oblong, lance-shaped, smooth above, cottony below, the lower ovate to lance-shaped, the upper lance-shaped, without stalks, with distant teeth in each case. The flowerheads are purplish-violet, with a scent like heliotrope, in small terminal, dense corymbs, few. The involucre is ovoid or subcylindrical. The phyllaries are hairy, appressed, oblong, blunt, woolly, the inner ones longer. The florets project. The anthers are purple, with hair-like appendages. The fruit is brown, smooth, ribbed, with a dirty-white pappus, the inner feathery. The plant is 3-15 in. high, flowering from July to September, and is a herbaceous perennial.

Hieracium Peleterianum, Mer.—The stolons of this Hawkweed are short and thick, with large leaves. The radical leaves are large, inversely lance-shaped, the inner nearly acute. The flower-stalks are glandular and hairy. The involucre is large and thick, with long silky dense hair. The phyllaries are broad, the outer loose, with a long, narrow point.

Hieracium pratense, Tausch.—The rhizome of this species is ascending, creeping, stoloniferous. The stem is hollow, with 1-3 radical leaves below and black-based hairs, cottony and glandular above. The dull-green leaves are inversely egg-shaped, lance-shaped, blunt, toothed, hairy. The

panicle is corymbose. The numerous heads are cylindric, oblong, rounded below. The dark-green phyllaries are linear, bluish, woolly, glandular, and hairy. The smooth ligules are pale-yellow. The achenes are dark-brown, furrowed, the ridges scalloped.

Hieracium amplexicaule, L.—This species has been reduced to a variety of *H. anglicum*, Fr., and made synonymous with var. *decipiens*, Syme, and var. *cerinthiforme*, Backh. The radical outer lower leaves wither early. The 2-4 stem-leaves are clasping, the lower narrowed near the rounded base. The panicle lacks lower branches.

Hieracium anglicum, Fr.—The habitat of this species is stream-sides and cliffs in mountainous districts on basalt and mica-schist. The stem is robust, hairy or nearly smooth. The radical leaves are egg-shaped, lance-shaped, narrow below, on long stalks, acute, entire, toothed below, downy below, the border softly hairy. The 1-2 stem-leaves are half-clasping. The panicle is corymbose, branched, with long, arching, ascending branches and flower-stalks bent inwards. The flower-stalks are glandular hairy, with little woolly felt. The 1-5 heads are large, rounded, enlarged below. The phyllaries are dark, long, with a narrow long point, narrow below, awl-like, glandular hairy, with little felted down. The ligules are light rather lemon-yellow, hairy. The styles are livid, dark.

Hieracium Langwellense, F. J. Hanb.—The stem of this species is stout, furrowed, with scattered white hairs below, with woolly felt and stiff black hairs. The radical primary leaves are egg-shaped, soon withering, the latter oblong, blunt, with a blunt point, and bluntly toothed below. The inner leaves are narrower, oblong, lance-shaped, narrow at both ends, acutely toothed below. The 2 stem-leaves are lance-shaped, toothed, or narrow. The heads are fairly large, 15, egg-shaped. The flower-stalks are rather slender, spreading, curved above, woolly-felted, with stiff hairs. The phyllaries are bent in, lance-shaped, linear, blunt, the inner rather acute, woolly-felted, hairy, glandular. The ligules are yellow, downy-tipped or smooth. The styles are livid.

Hieracium flocculosum, Backh.—The habitat of this species is river-banks and rocky places. The stem is stellately downy, glandular above. The radical leaves are leathery, inversely egg-shaped, oval, with fine teeth, narrowed abruptly to the woolly leaf-stalk. The inner leaves are acute, narrowed at the base, which is toothed, with woolly felt both sides. The 1-3 stem-leaves are half-clasping, the upper narrow, oval, acute. The panicle is loose, corymbose, the branches forming a raceme. The heads (2-4) are egg-shaped. The flower-stalks are woolly-felted. The dark-olive phyllaries are woolly-felted and glandular, and have a long narrow point and black hairs, the edge woolly-felted. The tips of the ligules are downy. The styles are light livid. The pits on the receptacle have the margins cut, toothed, and fringed with hairs. The plant flowers in July and August, being a herbaceous perennial 1½-2 ft. in height.

Hieracium iricum, Fr.—The habitat of this species is mountainous districts, the margins of streams, &c. The stem is rigid, stout, and has scattered, stiff, white hairs below, glands and hairs above. The radical leaves are oblong, oval, with fine teeth, narrowed into short leaf-stalks, with few, stiff, scattered hairs below. The 3-7 stem-leaves are clasping, egg-shaped to lance-shaped. The panicle is corymbose. The 4-8 heads are large, blunt below. The dark phyllaries are rather blunt, except the inner, with hairs and glands. The ligules have a fringe of sparse hairs. The styles are livid. The plant flowers in July and August, and is a herbaceous perennial, 1-3 ft. high.

Hieracium alpinum, L.—This species occurs on grassy slopes, ledges of alpine cliffs, exposed stony knolls on hill summits, on granite, mica-schist, hornblende, and slate, up to 1000 metres. The stem has long, soft hairs, woolly felt, and glands above. The radical leaves are inversely egg-shaped, spoon-shaped, bent back above, blunt, narrowed to the leaf-stalk, entire or slightly toothed, sparingly stiffly hairy above, with bulbous-based hairs below and on the margins. The stem-leaf is lance-shaped or strap-shaped, the upper ones bract-like. The heads are large, rounded below. The dark phyllaries are broad, the outer loose, acute, the inner linear, lance-shaped, with a long, narrow point, the innermost with a bristle-like point, with hairs and glands. The ligules are strongly stiffly hairy. The styles are yellow. The plant is 3-9 in. high, and flowers in July and August, and is a herbaceous perennial.

Hieracium holosericum, Backh.—The stem of this species is shaggy, with white hairs, white felted, glandular above. The radical leaves are inversely lance-shaped, blunt, entire, the outer broader, rounded, with a blunt point above, the inner rather acute, shaggy, with long, white hairs. The heads are conical or narrowed below. The outer phyllaries are loose and broad, blunt, the inner linear, acute, with dense, long, white hairs. The ligules are stiffly hairy. The styles are yellow.

Hieracium eximium, Backh.—The habitat of this species is lofty mountains, precipitous escarpments, inaccessible crags, on mica-schist and granite. The plant is green, the stem 1-headed, woolly-felted, shaggy, glandular. The radical leaves are yellowish, lance-shaped or inversely so, acute, narrowed to the leaf-stalk, entire or toothed, cut, with sharp acute teeth, with blunt points, hairy both sides. The leaf-stalks are broadly winged. The stem-leaves are single or absent, or 2-3, linear, lance-shaped. The solitary heads, or 2 or more, are rounded, bell-shaped. The outer phyllaries are loose, short, blunt, the inner linear, with a long narrow point, or narrow acute, with shaggy hair and glands. The ligules are stiffly hairy. The styles are dark-livid or black. The plant is 6-15 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium calenduliflorum, Backh.—The habitat of this plant is lofty mountains, grassy slopes,

and rocky ledges. The plant is dark-green, the stem is stout, woolly-felted, shaggy, and glandular. The radical leaves are elliptic, inversely egg-shaped, blunt, entire, lance-shaped, toothed, abruptly narrowed to the leaf-stalk, the inner narrower, acute, with acute teeth below. The 1-3 stem-leaves are usually bract-like. The 1-3 heads (usually 1) are large, rounded below, long-stalked. The outer phyllaries are lance-shaped, blunt, loose, the inner linear with a long narrow point, acute, shaggy. The ligules are stiffly hairy. The styles are very dark. The pits of the receptacle have raised borders, shortly-toothed, with a margin of hairs. The plant is 6-14 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium gracilellum, Backh.—The habitat of this plant is lofty mountains, grassy slopes, and rocky ledges. It ascends to 1200 metres in Ross, Banff, Aberdeen, Perth, Inverness, Argyll. The stem is woolly-felted, glandular, hairy. The radical leaves are bright-green, inversely egg-shaped, spoon-shaped, round-tipped, narrow below, the inner narrower, acute, toothed, smooth above, stiffly hairy below. The stem-leaves are 1-4, the lowest large, inversely lance-shaped, linear, acute, toothed, the upper bract-like. The heads, usually solitary or 2-3, are bell-shaped, rounded below. The phyllaries are few, broad, dark, the outer triangular, lance-shaped, the inner with a narrow long point, the innermost narrow, bristle-like, hairy, and glandular. The ligules are tipped with short, stiff hairs. The styles are livid or greenish-yellow. The plant is 6-10 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium petiolatum, Elfstrand.—The habitat of this plant is lofty mountains. The rhizome is knotted. The plant is green, with a metallic coppery lustre on the leaves. The stem is woolly-felted, hairy, glandular above. The outer radical leaves are spoon-shaped, the inner inversely lance-shaped to spoon-shaped, elliptic, narrowed to the winged leaf-stalk, the margin wavy, nearly entire or with few small teeth, stiffly hairy below. The stem-leaf is linear, with 1-2 bract-like leaves above. The heads, usually solitary, are large, round below, the flower-stalks woolly-felted, hairy and glandular. The phyllaries are lance-shaped, awl-like, the outer and intermediate one blunt or acute, the inner narrower with a long narrow point, hairy and glandular. The ligules are yellow, stiffly hairy. The styles are dark. The plant is 4-7 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium globosum, Backh.—The habitat of this plant is mountains, the crevices of shelving rocks, grassy ledges, on debris below granite cliffs. The plant is bluish-white or green. The stem is woolly-felted, glandular, with white hairs above. The primary radical leaves are rounded to spoon-shaped, the later ones lance-shaped, egg-shaped, blunt, the inner acute, narrowed to the short leaf-stalk, irregularly toothed at the base, or with large, acute, ascending teeth, stiffly hairy

below, the borders fringed with hairs. The stem-leaves are few or absent, inversely lance-shaped. The heads are solitary or 2-4, rounded, spherical. The phyllaries are olive-green, numerous, narrowed, acute, closely pressed, hairy, glandular. The ligules are yellow, stiffly hairy or smooth. The styles are yellow. The plant is 6-12 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium curvatum, Elfstrand.—The habitat of this plant is Highland mountains, where it occurs on granite, mica schist, and hornblende. The plant is green. The stem is stiffly hairy, woolly-felted, glandular, especially above. The radical leaves are bright-green, coarsely toothed, spoon-shaped, the later elliptic, oblong, rounded above, narrowed to the leaf-stalk, the inner inversely lance-shaped, acute, with acute teeth below, sparsely hairy both sides. The lower stem-leaves are lance-shaped, acute, shortly-stalked, with acute teeth, the upper 2-3, linear, bract-like. The heads, usually solitary or 2-3, are very dark, large, rounded below, on long arching stalks, when branched, woolly-felted, hairy, glandular. The phyllaries meet together in the bud, the outer loose, linear, lance-shaped, blunt, the inner with a long, narrow point, 2-3 innermost awl-like, shaggy, hairy, scarcely glandular. The ligules are orange, the teeth fringed with hairs or smooth. The styles are brownish. The plant is variable in height, flowering in July and August, and is a herbaceous perennial.

Hieracium Backhousei, F. T. Hanb.—The habitat of this plant is lofty mountains, crevices of rocky beds and margins of mountain streams, stony shores of alpine lakes. The stem is dark-green, wavy, with long, white, spreading hairs, stellately downy and glandular above. The radical leaves are erect, deep-green, leathery, glossy, rounded to spoon-shaped, inversely egg-shaped, the apex rounded, narrowed to the foot-stalk, the latter oblong, lance-shaped, the inner lance-shaped, linear, acute, with acute, ascending, curved teeth below. There are 1-3 stem-leaves. The lower are stalkless, narrow, lance-shaped, acute, sharply toothed, the upper linear, bract-like, the leaves smooth above, stiffly hairy below, especially on the margin. The heads are dark, 1-3, rounded below, the stalks long, straight, woolly-felted, glandular. The outer phyllaries are linear, loose, the inner linear, lance-shaped, blunt, the innermost narrow, acute, clothed with hair, without glands. The ligules are yellow, stiffly hairy. The style is yellow or livid. The pappus is tawny. The plant is 5-15 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium lingulatum, Backh.—The habitat of this plant is mountain glens, rocky beds of mountain streams, and in their debris, grassy ledges, exposed cliffs. The plant is green, with a stiffly hairy, woolly-felted (above hairy), glandular stem. The radical leaves are deep dull-green, leathery, with fine teeth, the outer inversely egg-shaped, rounded above, the inner tongue-shaped (hence *lingulatum*), lance-shaped, acute, narrowed, rough,

hairy, above and below, and on the border. The stem-leaves are 2-3, the lower nearly stalkless, like the lower inner leaves, the upper leaves very small. The 2-4 heads are rounded below, with woolly-felted glandular stalks. The phyllaries extend forwards in bud, and are linear, acute, greenish-black, oblong, narrow above, hairy, glandular. The ligules are smooth or fringed with hairs. The styles are dark, livid. The plant is 15-24 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium senescens, Backh.—The habitat of this plant is grassy slopes and edges of streams in mountain districts, in crevices, mountain ledges, chiefly on mica schist, rarely on granite. The plant is green, with a stiffly hairy, woolly-felted, glandular stem. The radical outer leaves are oval, rounded above, the inner oval, lance-shaped, blunt or acute, narrowed to the stalk, entire, toothed, the inner leaves sharply toothed below, with few stiff hairs. The stem-leaves are 1-2 or none. The lower are lance-shaped, linear, long, stalked, the upper bract-like. The 1-4 heads are egg-shaped, conical below, on long arching stalks. The phyllaries meet together in the bud, the outer being narrow, linear, the inner lance-shaped, linear, acute, the innermost narrowed, woolly-felted, hairy, glandular. The ligules are yellow, stiffly hairy or smooth. The styles are yellow. The plant is 15-18 in. in height. It flowers in July and August, and is a herbaceous perennial.

Hieracium Marshalli, Linton.—The stem of this plant is erect, stiffly hairy, woolly-felted, glandular above. The radical leaves are yellowish-green, the outermost roundly oval, broad, egg-shaped, toothed or entire, the inner egg-shaped, lance-shaped, with a long narrow point, with acute, ascending teeth towards the base, stiffly hairy below and on the border. The stem-leaf is solitary, large, stalkless or shortly-stalked, like the inner radical leaves. The 1-6 heads are large, dark, rounded below, on long arching, wavy, woolly-felted, stiffly hairy, glandular stalks. The dark olive-green phyllaries are broad, the outer short, loose, the intermediate linear, blunt, acute, senescent, hairy and glandular. The ligules are golden, stiffly hairy at the tip. The styles are broad. The plant is 7-16 in. high, and flowers in July and August, being a herbaceous perennial.

Hieracium chrysanthum, Backh.—The habitat of this plant is lofty mountains in Scotland, alpine glens, grassy slopes, ledges, stony margins of lakes, rocky burns, on granite, mica-schist, and hornblende. The plant is green, with a stiffly hairy, glandular, woolly-felted stem branching from the base. The radical leaves are bright-green, glossy, the first leaves spoon-shaped, inversely egg-shaped, the later oblong, elliptic, oval, rounded, blunt above, irregularly sharply toothed below, the inner oblong, lance-shaped, acute, the teeth long, the base wedge-shaped, hairy below and on the border. The stem-leaves are solitary or wanting, stalked, narrow, lance-shaped, with acute teeth, with a linear bract-like

leaf above. The heads are usually 1-3, black, rounded below. The stalks are short, straight or wavy, hairy, and glandular. The phyllaries are long, extending forwards, the outer small, loose, the inner long, linear, narrowed from a broad base, acute, bristle-like, senescent, hairy, and slightly glandular. The ligules are orange-yellow, the inner fringed with hairs. The styles are yellow, livid. The plant is 9-15 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium sinuans, F. J. Hanb.—The habitat of this plant is lofty mountain glens, ravines of mountain streams, moist ledges in the glens. The stem is hollow, simple or branched, stiffly hairy, woolly-felted, hairy, and glandular above. The radical leaves are green to red, the first ones spoon-shaped, inversely egg-shaped, the later oblong, rounded, blunt above, the inner narrow to oblong, lance-shaped, with a long narrow point, the margin wavy (hence *sinuans*), the base running down the stem, with sharp teeth pointing forwards, stiffly hairy below, the border fringed with hairs. The stem-leaf is solitary, lance-shaped, acute, or bract-like, toothed. The 3-7 heads are large, dark, pitcher-like or bell-shaped, on long, straight, woolly-felted, glandular, stiffly hairy stalks. The phyllaries meet together in bud, and are very dark, the outer short, loose, the inner narrow, linear, lance-shaped, acute, with a pale margin, senescent, hairy, and glandular. The ligules are golden, stiffly hairy, the tips hairless. The styles are very dark. The plant is 6-15 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium nigrescens, Willd.—The habitat of this plant is lofty mountains. The plant is green, the stem wavy, stiffly hairy, woolly-felted, glandular. The radical leaves are oval, elliptic, blunt, with a short point, toothed especially towards the base, narrowed to the foot-stalk, stiffly hairy. The 1-2 stem-leaves are bract-like. The few heads are dark, slender, egg-shaped, with a rounded base. The stalks are stout, spreading, glandular. The phyllaries are slender, linear, glandular. The ligules are stiffly hairy. The styles are dark. The height is 4-6 in. The plant flowers in July and August, and is a herbaceous perennial.

Hieracium atratum, Fr. f.—The habitat of this plant is lofty mountains. The stem is simple or branched, nearly smooth, stellately downy, glandular. The radical leaves are bright-green above, stiffly hairy below, broad, elliptic, entire, with a blunt base, the inner oval, lance-shaped, acute, wavy, coarsely irregularly toothed, the teeth acute, broad, triangular, ascending, the leaves on long stalks. The stem-leaf is solitary, stalked, oval, lance-shaped, acute. The heads are rounded below, on arching, long, woolly-felted, glandular stalks, with bracteoles at the base. The very dark-green phyllaries are blunt, the inner with a pale margin, awl-like, glandular, hairy, with woolly felt at the base of the outer. The ligules are yellow, stiffly hairy, the tips fringed with hairs, smooth in British specimens. The styles are yellowish-brown. The plant is 6-12 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium cumbriense, F. J. Hanb.—The habitat of this plant is lofty mountains. The rootstock is horizontal or bent, woody. The stem is stout, reddish, rough, stiffly hairy, woolly-felted, glandular. The radical leaves are numerous, thick, yellow, bluish-white, the outer rounded, blunt at the base, the later egg-shaped, oval, blunt-pointed, toothed, wedge-shaped at the base, the inner elliptic, egg-shaped, lance-shaped, narrow, acute, with 4 large teeth each side, smooth, stiffly hairy, in the nerves below fringed on the border. The stem-leaf is solitary, stalked, linear, bract-like. The panicle is close, with 1-2 racemose, corymbose, umbellate branches, the upper erect, spreading. The stalks are straight, woolly-felted, glandular. The 5-10 heads are large, black, long. The long phyllaries extend forwards in bud, the outer triangular, acute, the inner long, linear, blunt, the inner narrower, acute, with pale-green borders, with woolly felt, except the outermost, and glandular. The ligules are orange, smooth. The styles are livid.

Hieracium submureorum, Lindeb.—The habitat of this plant is lofty mountains. The stem is usually simple, stout, tall, stiffly hairy, slightly woolly-felted below, glandular above. The radical leaves are light-green, thick, broad, the outer rounded, inversely egg-shaped, blunt, narrowed below, the middle oval, inversely egg-shaped, acute, coarsely and sharply toothed below, the innermost egg-shaped, lance-shaped, acute, the teeth long, acute. The stem-leaves are stalked, egg-shaped, lance-shaped, acute, toothed, the upper linear, lance-shaped, entire, stiffly hairy below, fringed with hairs. The panicle is loose, with 2-3 patent 1-2-headed branches, the upper arching, woolly-felted, glandular. The 4-10 heads are thick, blackish-green, rounded, egg-shaped, cylindric in bud. The outer phyllaries are loose, the inner long, lance-shaped, linear, blunt, the innermost narrowed, acute, with a pale border, senescent, hairy, and glandular. The ligules are tipped with hairs. The styles are livid-black. The plant is 10-18 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium centripetale, F. J. Hanb.—The habitat of this plant is rocky beds of alpine burns. The stem is erect, solid, furrowed, wavy, stiffly hairy below, woolly-felted, glandular above. The radical leaves form a flat rosette, the earliest being rounded, egg-shaped, the later narrow, oblong, the inner lance-shaped, horizontally toothed towards the wedge-shaped base, stiffly hairy below and on the margins. There is one stem-leaf, the bract linear, lance-shaped, toothed. The panicle has long, alternate, arching branches. The 2-12 heads are narrow, bell-shaped, narrow at the base in bud. The flower-stalks are arching, woolly-felted, glandular. The phyllaries are long, narrow, linear, the outer blunt, acute, woolly-felted, the inner narrow, with a pale margin, senescent, glandular, hairy. The styles are livid. The ligules have stiffly hairy tips. The margins of the receptacle pits are toothed and torn. The plant is

14-16 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium hyparcticum, Almq.—The habitat of this species is mountainous. The rhizome is long, woody. The stem is branched, woolly-felted, yellowish-green, the outer leaves oval, elliptic, nearly entire, with a blunt point, the inner elliptic, egg-shaped, toothed below, narrowed to the bent-back stem-leaf, woolly-felted, and hairy beneath and on the border. The stem-leaf is solitary or absent, stalkless, narrow, woolly-felted below. The panicle is cymose, with 2-3 long, arching, spreading branches, the flower-stalks woolly-felted, glandular, with few stiff hairs. The 2-5 heads are cylindric in bud, long, narrowed to the flower-stalk. The phyllaries are deep green, the outer short, lance-shaped, blunt, the inner narrow, acute, woolly-felted on the border, senescent, hairy, glandular. The ligules are yellow, tipped with stiff hairs. The yellow styles turn dingy. The plant is 12-20 in. high, flowering in July, and is a herbaceous perennial.

Hieracium lima, F. J. Hanb.—The habitat of this species is limestone cliffs. The stem is bluish-white, woolly-felted, hairy below and glandular above, branched or simple. The primary radical leaves are purplish below, egg-shaped, entire, wedge-shaped, or rounded below, the inner lance-shaped, oblong, sharply toothed below, narrowed to the shaggy long leaf-stalk, hairy both sides. The stem-leaf is stalked, oblong, lance-shaped, acute, or absent. The panicle is falsely forked, in a corymb, the branches spreading or erect, arching. The 3-7 heads have arching, woolly-felted, glandular stalks. The phyllaries are narrowly long-pointed, with pale margin, hairy, glandular, woolly-felted, especially on the borders. The tips of the ligules are smooth. The styles are yellow. The borders of the receptacle pits are toothed and fringed with teeth. The plant is 8-14 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium Leyi, F. J. Hanb.—The habitat of this species is mountain cliffs. It is found in eleven vice-counties—Carnarvon, Merioneth, Brecon, Yorks, Perth, Forfar, Aberdeen, &c. The stem is reddish, stiffly hairy below, glandular above, rough, furrowed. The primary radical leaves are small, oval, dark bluish-green, with black spots or purple, the outer egg-shaped, the inner lance-shaped, acute, stalked, toothed below, narrowed to the foot-stalk, stiffly hairy, then smooth. The stem-leaf is lance-shaped, or may be wanting. The panicle is a forked corymb, the branches straight, or curved above. The flower-stalks are woolly-felted, glandular. The 2-7 heads are large. The phyllaries extend forwards, the outer linear, loose, blunt, the inner linear, lance-shaped, narrow, acute, woolly-felted, hairy, and glandular. The tips of the ligules are stiffly hairy or downy. The styles are yellow to livid. The margins of the receptacular alveoli are toothed, cut, and awl-like. The plant is 6-15 in. high, flowering from June to August, and is a herbaceous perennial.

Hieracium Schmidtii, Tausch.—The habitat of

this plant is rocks and streamsides in mountainous districts. The stem is bluish-green, wavy, nearly smooth below, woolly-felted, stiffly hairy, and glandular above, simple or branched, hollow. The radical leaves are bluish-green, oval, oblong, lance-shaped, elliptic, toothed, with long and acute ascending teeth, the leaf-base wedge-shaped, stiffly hairy below. The stem-leaves are 2, or absent, stalkless, oblong, lance-shaped, elliptic, sharply toothed, entire, or bract-like. The panicle is falsely forked, corymbose, the branches erect to spreading, in a raceme. The 4-5 heads are rounded, egg-shaped. The inner phyllaries are rather acute, woolly-felted at the border, hairy, glandular. The styles are yellow or livid. The ligules are fringed with hairs or smooth at the tip. The receptacle pits are cut and torn at the border. The plant is 5-12 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium lasiophyllum, Koch.—The habitat of this species is mountain rocks. The altitude is 450-750 metres. The stem is bluish-green, simple or branched, woolly-felted, stiffly hairy, glandular above. The radical leaves are broadly oval, bluish-green, firm, the outer elliptic, rounded, narrowed to the foot-stalk, the inner oblong, lance-shaped, entire, toothed, the innermost with a long, narrow point, wavy, toothed, with a wedge-shaped base. The stem-leaf is solitary or absent, lance-shaped. The panicle is falsely forked, in a corymb, the branches in a raceme, or divided into two. The stalks are woolly-felted, glandular, hairy. The 1-5 heads are rounded, egg-shaped. The phyllaries are linear, lance-shaped, acute, the inner with a long, narrow point, wavy, and glandular, woolly-felted. The tips of the ligules are smooth. The styles are yellow. The plant is 6-16 in. high, flowering from May to August, and is a herbaceous perennial.

Hieracium rubicundum, F. J. Hanb.—The habitat of this plant is rocks and mountains, on volcanic ash, &c. The stem is stout, erect, simple or branched, reddish, woolly-felted, hairy, glandular above. The radical leaves are bluish-green, with purple blotches both sides, broad, lance-shaped, the outer oval, the inner lance-shaped, egg-shaped, rounded or wedge-shaped below, toothed, the innermost acute, coarsely toothed, stiffly hairy below. The stem-leaf is large (or 1-2), high on the stem, stalked, egg-shaped, acute, sharply toothed. The panicle is a loose forked corymb. The heads are large, showy, egg-shaped, 3-4. The stalks are woolly-felted, stiffly hairy, glandular. The phyllaries are lance-shaped, blunt, the inner narrow, pink-tipped, meeting together in bud, woolly-felted at the border, hairy, glandular. The tips of the ligules are smooth, and the inner are fringed with short hairs. The styles are yellow or light olive, slightly livid. The margins of the receptacle pits are toothed, cut, and awl-like. The plant is 10-20 in. high, flowering in June to August, and is a herbaceous perennial.

Hieracium caledonicum, F. J. Hanb. — The habitat of this plant is sea cliffs and inland rocky

districts. The stem is erect, simple or branched, stiffly hairy, woolly-felted, glandular above. The radical leaves are dull or yellowish-green, purplish, the outer egg-shaped, oblong, rounded, narrow or wedge-shaped at the base, the inner egg-shaped, lance-shaped, with long, glandular teeth, or broad, blunt teeth, stiffly hairy below and on the border. The stem-leaf is low down, clasping, shortly-stalked, or stalkless, like the inner basal leaves. The panicle is loose, corymbose, the lower branches long, erect to spreading, racemose, divided into two. The flower-stalks are rather long, woolly-felted, hairy, glandular. The 3-6 heads are rounded, egg-shaped. The phyllaries are dark, blunt, linear, oblong, lance-shaped, narrow below, the inner with pale margins, narrowed, woolly-felted, hairy, glandular. The ligules are orange, smooth. The styles are olive-brown. The pits of the receptacles are cut, toothed, awl-like. The plant is 6-14 in. high, flowering from June to August, and is a herbaceous perennial.

Hieracium nitidum, Backh.—The habitat of this plant is mountain streams, rocky margins of alpine streamlets. The plant is dark-green. The stem is nearly hairless, or with few hairs, woolly-felted, glandular above. The radical leaves are dark-green, firm, smooth, shining (hence *nitidum*), the outer egg-shaped, oval, oblong, blunt, the inner lance-shaped, acute, narrowed to the stalk, coarsely-sharply-toothed below, the innermost narrow, lance-shaped, toothed, stiffly hairy below and on the margin. The stem-leaf, 1 or none, is narrow with a long point, toothed. The panicle is falsely forked, in a corymb. The lower branches are straight, the upper curved, divided, or single-headed. The 5-7 heads are egg-shaped, blunt below. The dark phyllaries are blunt, linear-lance-shaped, narrow below, the inner long, narrow, woolly-felted, the tips smooth, hairy, glandular. The tips of the ligules are smooth, the inner stiffly hairy in bud. The styles are yellow. The plant is 15-24 in. in height, and flowers in July and August, being a herbaceous perennial.

Hieracium carenorum, F. J. Hanb.—The habitat of this plant is lofty mountains. The stem is slightly woolly-felted and stiffly hairy, glandular above. The radical leaves are pale-green, the basal 6-8. The outermost are oval, rounded, wedge-shaped below, the inner oval, egg-shaped, lance-shaped, acute, with acute, ascending, marginal teeth, stiffly hairy below and on the border. The stem-leaf is narrow, lance-shaped, acute, toothed, stalkless, smooth above, woolly-felted below on the border and mid-rib, fringed with hairs. The panicle is forked and corymbose. The flower-stalks are woolly-felted, stiffly hairy, glandular. The 3-7 heads are dark-green, egg-shaped. The phyllaries are dark-green, the outer small, linear, blunt, closely pressed, the inner lance-shaped, narrow, paler with transparent borders, hairy, glandular. The ligules are stiffly hairy, the tips hairless. The styles are yellow. The plant is 10-12 in. high, flowering in June and August, and is a herbaceous perennial.

Hieracium argenteum, Fr.—The habitat of this

plant is mountain districts, rocky places. The stem is simple or branched, bluish-green, smooth below, with woolly-felted glands above. The radical leaves are the same colour, or leaden, pale bluish-green below. The outer are spoon-shaped, inversely egg-shaped, the inner strap-shaped, elliptic, lanceolate, narrowed at both ends, acute, toothed, hairy, on long stalks. The 1-3 stem-leaves are small, narrow, lance-shaped. The panicle is a loose corymb. The stalks are long, straight, woolly-felted, glandular. The short heads are thick. The phyllaries extend forwards, and are dark, the inner paler below, the outer blunt, the inner acute, woolly-felted, stiffly hairy, glandular. The tips of the ligules are smooth. The styles are pure yellow.

Hieracium Sommerfeltii, Lindeb.—The habitat of this plant is mountains, granite hills. The stem is slender, erect, simple or branched, smooth, or stiffly hairy below, glandular above. The radical leaves are horizontal, bluish-green, purple-blotted, the outer small, oblong, egg-shaped, narrowed to the foot-stalk, the inner egg-shaped, lance-shaped, acute, with fine teeth, stiffly hairy, woolly-felted below. The stem-leaf is bract-like, or if present lance-shaped, low down. The panicle is a loose, simple, or falsely-forked corymb, with arching divided branches. The 2-4 heads are blunt and cylindric in bud. The flower-stalks are woolly-felted, hairy, glandular. The phyllaries are oblong, linear below, lance-shaped, acute, the inner narrowed, longer than the ligules in bud, the tips bent back, woolly-felted, stiffly hairy, with small glands. The tips of the ligules are fringed with short hairs. The styles are yellow. The plant is 8-12 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium hypochæroides, Gibbs.—The habitat of this species is mountains, limestone talus, dry, exposed rocky ledges. The plant is bluish-green, the leaves forming a rosette, persistent, broad, blotched with purple above. The stem is purplish, stiffly hairy below, woolly-felted, glandular above. The radical leaves are dull-green, purple-blotted, round, oval, egg-shaped, heart-shaped, toothed, with 2-3 teeth below, the innermost egg-shaped, oblong, lance-shaped, sharply toothed, stiffly hairy. There are no stem-leaves (or one, narrow, lance-shaped, toothed, shortly stalked). The panicle is falsely forked, with divided branches, straight. The heads are 2-4. The stalks are woolly-felted, glandular. The broad phyllaries are rather blunt, the outer triangular lance-shaped, the inner oblong, linear, narrowed above, the innermost narrow, woolly-felted, glandular, hairy. The ligules are smooth. The styles are yellow. The margins of the pits of the receptacles are deeply cut. The plant is 6-18 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium cyathis, Ley.—The habitat of this species is limestone rocks. The stem is stout, rigid, woolly-felted. The radical leaves are dull-green, slightly blotched, the outer egg-shaped, rounded, or wedge-shaped below, the intermediate oval, narrow, elliptic, toothed, the inner egg-

shaped, lance-shaped, acute, toothed, the margins fringed with hairs. The leaf-stalks are shaggy. The stem-leaf is linear or absent. The panicle forms a corymb, with 2-3 lower rigid spreading straight branches, the upper close, exceeding the short-stalked acodium. The flower-stalks are straight-based, curved above, woolly-felted, hairy, glandular. The 3-10 heads are rather large, egg-shaped, angular below. The buds are short, with loose outer scales. The phyllaries extend outwards, the tips at first bent back, cup-like (hence *cyathis*), the outer and intermediate lance-shaped, obtuse, woolly-felted, senescent, the inner acute, with a pale margin, with white hair and glands. The ligules are smooth. The styles are yellow. The plant is 18-24 in. high.

Hieracium britannicum, F. J. Hanb. — The habitat of this plant is limestone dales and scars. The stem is branched, finely furrowed, stiffly hairy below, woolly-felted, glandular above. The radical leaves are firm, bluish-green, furrowed, smooth above, hairy below, the outer egg-shaped, oblong, blunt-based, the inner triangular, acute, toothed, the innermost narrow, wedge-shaped below. The stem-leaf is large below, bract-like in the branched portion. The leaves are stiffly hairy below, fringed on the borders, with stiff-toothed hairs. The panicle is a falsely-forked corymb, with long, straight or divided branches. The 3-10 heads are blunt, then egg-shaped. The flower-stalks are long, arching, woolly-felted, hairy, glandular. The phyllaries extend forwards, and are lance-shaped, oblong, narrow below, woolly-felted, the innermost narrow, bristle-like, pale, with purple tips, bare, the others glandular hairy. The ligules are hairless. The styles are light livid. The margins of the pits of the receptacle are cut, toothed, awl-like. The plant is 12-18 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium vagense, Ley.—The habitat of this plant is riverside rocks. The stem is slender, drooping, branched or simple, hairy, woolly-felted, glandular above. The radical leaves are light glaucous-green, long, egg-shaped, lance-shaped, acute, toothed, the base narrow or wedge-shaped, stiffly hairy below. The main veins are semi-transparent. The stem-leaf is bract-like, linear, lance-shaped, toothed. The panicle is a loose corymb, the upper branches arching, exceeding the acodium. The heads are 3-9. The stalks are woolly-felted, glandular. The phyllaries extend forwards in bud, and are narrow, long-pointed, the inner narrow above, hairy, glandular. The styles are yellow. The tips of the ligules are smooth. The margins of the receptacle pits are cut, toothed. The plant is 12-18 in. high, flowering in June, and is a herbaceous perennial.

Hieracium Oreades, Fr., var. *subglabratum*, F. J. Hanb.—The habitat of this plant is rocks by the sea. The stem is simple or branched, bluish-green, purplish, hairy, woolly-felted, glandular above. The radical outer leaves are elliptic, egg-shaped, finely toothed or entire, wedge-shaped below, the inner long, linear, lance-shaped, acute,

toothed. The 2-4 stem-leaves are large, lance-shaped, acute, toothed or entire, smaller above, narrowed to the half-clasping leaf-stalk. The panicle is a falsely-forked corymb, with racemose or divided branches. The 2-6 heads are long, egg-shaped. The flower-stalks are woolly-felted, glandular. The phyllaries meet together below, are dark, narrowed to the acute point, the inner narrowed, all woolly-felted at the edge, glandular. The tips of the ligule are fringed with hairs. The styles are yellow. The margins of the receptacle pits are fringed with teeth. The plant is 2-18 in. high, flowers in July, and is a herbaceous perennial.

Hieracium pseudonosmoides, Dahlst.—The habitat of this plant is mountain crags. The stem is bluish-green, stiffly hairy, woolly-felted, glandular above. The earlier radical leaves are small, roundish, ovate, spoon-shaped, entire or toothed, the later oblong, lance-shaped, acute, toothed, narrowed to the winged leaf-stalk, stiffly hairy below and on the margins. The 2-7 stem-leaves are smaller upwards, lance-shaped, entire toward the apex, coarsely toothed toward the base, hairy both sides, stalkless, or with a winged leaf-stalk. The panicle is close, with straight branches, arched above, divided, or in a raceme, exceeding the acodium. The stalks are bent inwards, woolly-felted, stiffly hairy, glandular. The 2-7 heads are rounded, egg-shaped. The phyllaries are linear, lance-shaped, narrowed above, acute, with a green border, glandular, woolly-felted. The ligules are pale-greenish-yellow, not opening, with smooth tip. The styles are dull-yellow or livid. The plant is 8-14 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium orimelae, W. R. Linton.—The habitat of this plant is alpine crags. The plant is green, slightly bluish-green, erect, wiry, purple below, rough, stiffly hairy, woolly-felted, glandular above. The radical leaves are leathery, egg-shaped, blunt, entire or toothed, narrowed to the winged leaf-stalk, hairy, especially on the margins. The 3-4 stem-leaves are half-clasping, narrow, lance-shaped, acute, toothed. The panicle is a falsely-forked corymb, the branch low down, the branches straight, erect, divided, or in a raceme. The stalks are thickened at the tips, woolly-felted, stiffly hairy, glandular. The 4-6 heads are rounded, blunt. The phyllaries extend forwards in bud, are dark, lance-shaped, linear, blunt or acute, the inner have pale margins and are narrowed above, woolly-felted, glandular. The ligules are orange, fringed with hairs. The styles are yellow, hairy. The margins of the receptacle pits are cut, awl-like. The plant is 12-16 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium hibernicum, F. J. Hanb.—The habitat of this plant is cliffs and mountains. The stem is reddish-purple, green above, smooth, simple. The basal leaves are egg-shaped, lance-shaped, blunt, the outer soon withering. The stem-leaves 5-9, are smaller upwards, egg-shaped, lance-shaped, linear, acute, toothed below, grey-green, smooth above, hairy, woolly-felted below. The

1-3 heads are large and blunt. The stalks bear bracteoles, and are woolly-felted and glandular. The outer phyllaries are small, loose, linear, blunt, woolly-felted at the border, the inner broad, oblong, linear, blunt, woolly-felted, glandular. The ligules are smooth. The styles are slightly livid. The plant is 12-22 in. high, flowering in July, and is a herbaceous perennial.

Hieracium buglossoides, Arv. Touv.—This plant is green. The stem is purplish, stiffly hairy below, glandular above. The radical leaves are firm, yellow, bluish-green, broad, large, lance-shaped, long, narrowed to the long leaf-stalk, the inner with a few large, triangular, blunt or sharp teeth below, stiffly hairy. The 2-4 stem-leaves have leaf-stalks in the case of the lower, and are similar to the basal leaves, the upper linear, lance-shaped, toothed, acute. The panicle is 1-2 forked, the lower branches in a raceme, the upper divided or single, the stalks are slightly curved, woolly-felted, glandular. The heads are few or numerous, rounded, egg-shaped, dark-green. The phyllaries are narrow, lance-shaped, acute, the inner narrow, acute, the innermost bristle-like, glandular, woolly-felted. The ligules are smooth. The styles are yellow, slightly livid. The margins of the receptacle pits are fringed with teeth. The plant is 1½-4 ft. in height, flowering in July, and is a herbaceous perennial.

Hieracium scoticum, F. J. Hanb.—The habitat of this plant is mountains and sea cliffs. The plant is erect, simple or branched, hairy, woolly-felted. The radical leaves are leathery, purplish, egg-shaped, lance-shaped, hairy below, and on the margins smooth above, entire or irregularly toothed. The stem-leaves are 1-6, large, smaller upwards, broadly lance-shaped, with a narrow point, hairy below, nearly smooth, toothed, the lower stalked, the upper stalkless, clasping, linear, entire. The heads, 3-9, are dark, large, rounded below. The stalks are long, arched, hairy, woolly-felted, glandular. The outer phyllaries are short, loose, broad to linear, blunt, the inner oblong, narrowed above, blunt, the innermost narrow, acute, with a pale margin, woolly-felted, hairy, glandular. The ligules have hairless tips. The styles are brown. The margins of the receptacle pits are elevated, cut, toothed, awl-like. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium proximum, F. J. Hanb.—The habitat of this plant is sandy links and cliffs. The stem is simple or branched, hairy, woolly-felted. The radical leaves are yellowish-green with pink on the margins, thick, leathery, rough both sides, the hairs with bulbous base, stalked, wavy, egg-shaped, lance-shaped, nearly entire. The stem-leaves 2-4, smaller upwards, are shortly stalked or stalkless, lance-shaped, acute, irregularly toothed. The panicle is simple or compound, close, in a corymb, with a distant lower branch. The 3-7 heads are large, rounded, or blunt below. The stalks are short, arching, woolly-felted, hairy. The phyllaries are lance-shaped, linear, oblong, narrowed above, blunt, the inner acute, woolly-

felted on the borders, hairy, glandular. The tips of the ligules are smooth or downy. The styles are olive-brown. The margins of the receptacle pits are elevated, sharply toothed, the teeth awl-like or bristle-like. The achenes are dark brown. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium callistophyllum, F. J. Hanb.—The habitat of this species is rocky margins of high mountain streams. The stem is erect, much branched, hairy, woolly-felted, glandular above. The radical leaves are greyish-green or green, turning purple, the earliest are round to oval, inversely egg-shaped, with a blunt base, the innermost broad, lance-shaped, acute, toothed, stiffly hairy. The stem-leaf is stalkless, narrow, acute, toothed, or may be wanting. The panicle is a falsely-forked corymb. The branches are bent inwards, divided or in a raceme. The 2-5 heads are cylindrical, rounded at the base. The flower-stalks are woolly-felted, glandular. The phyllaries are dark-green, the outer short, blunt, the inner with pale margins, acute, woolly-felted on the margins, senescent, hairy, glandular. The ligules are fringed with hairs at the tip. The styles are yellow or very light livid. The margins of the receptacle pits are deeply cut, toothed. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium clovense, Linton.—The habitat of this species is cliffs, highland mountains. The stem is reddish, nearly smooth above, woolly-felted below, the radical leaves are egg-shaped with a long, narrow point, toothed, the lowest bent back, hairy both sides with purple blotches, the stem-leaf is wanting, or lance-shaped, shortly stalked, entire or toothed. The heads are broad, in a loose corymb, rounded, egg-shaped. The stalks are woolly-felted, glandular. The phyllaries are dark, extending forwards in bud, the outer linear, oblong, narrow above, the inner narrow-pointed, hardly woolly-felted, with a pale border, hairy, glandular. The styles are yellow. The ligules are smooth or fringed with hairs. The margins of the receptacle pits are raised or with short teeth. The plant is 8-16 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium pachyphyllum, Purchas.—The habitat of this species is rocky cliffs. The stem is reddish, finely furrowed, stiffly hairy below, woolly-felted, glandular above. The radical leaves are bluish-green, the outer oval, egg-shaped, oblong, blunt, or heart-shaped below, toothed, the inner more pointed, stiffly hairy, the hairs with bulbous base, below and on the border, with purple margins. The stem-leaf is bract-like or absent, or egg-shaped, long-pointed, toothed low down, stalked. The panicle is a falsely-forked corymb. The stalks are straight or ascending, woolly-felted, glandular. The 3-8 heads are broad, egg-shaped. The phyllaries are broad, lance-shaped, linear, blunt, folded in early bud, woolly-felted at the margin, senescent, the inner narrow above, with many yellow glandular hairs. The ligules are yellow, smooth at the tip. The styles are yellow or slightly livid.

The margins of the receptacle pits are slightly raised, toothed. The plant flowers in June.

Hieracium sanguineum, Ley.—The habitat of this plant is limestone pavements and rocks. The stem is furrowed, stiffly hairy or smooth. The radical leaves are dull-green, blood-red beneath, oval, oblong, toothed, blunt below, the inner narrower, long-pointed, wedge-shaped below, inequilateral, smooth, stiffly hairy on the veins below and on the border. The stem-leaf is wanting, or solitary, linear, lance-shaped, stalkless. The lower branches are nearly erect, the upper ascending and exceeding the acodium. The stalks are woolly-felted, glandular, with few hairs. The 3-6 heads are large, round or broad to egg-shaped. The phyllaries are bent inwards, but do not meet together in bud, rather broad, oblong, linear, narrow above, blunt, the intermediate narrow, acute, woolly-felted at the edge, hairy, glandular. The ligules are fringed with few hairs at the tip. The styles are dull-yellow. The pits of the receptacle are slightly raised at the border, scarcely toothed.

Hieracium stenolepis, Lindb.—The habitat of this plant is mountains and cliffs. The stem is simple or branched, furrowed, slender, stiffly hairy, woolly-felted above. The outer radical leaves are oblong, rounded, blunt, heart-shaped, the inner oblong, lance-shaped, oval, acute, blunt or wedge-shaped, arrow-shaped below, toothed below, the innermost narrower, acute, with a long point, toothed, running down the leaf-stalk, bluish-green, woolly-felted below, stiffly hairy on the border. The stem-leaf low down is stalked, narrow, linear, lance-shaped, sharply toothed. The panicle is 1-forked, the branches long and curved. The stalks are woolly-felted, glandular. The 4-7 heads are small, narrow, egg-shaped. The phyllaries are narrow, greenish-black, extending forwards, woolly-felted, stiffly hairy, glandular below. The ligules are hairless. The styles are yellow. The pits of the receptacle are cut, toothed. The plant is 6-14 in. flowering in June and July, and is a herbaceous perennial.

Golden Lungwort (*Hieracium silvaticum*, Gouan).—The habitat of this plant is woods and dry places, rarely on walls, basaltic hills and limestone rocks, mountain slopes. The stem is smooth, or stiffly hairy, woolly-felted, glandular above. The radical leaves are thin, membranous, elliptic, lance-shaped, blunt or heart-shaped, arrow-shaped below, toothed, the teeth horizontal or bent back, stiffly hairy on the veins below. The solitary stem-leaf is broad, linear, acute, toothed. The panicle is corymbose, the lower branches erect or spreading, ascending. The upper branches are close, in an umbel, ascending, exceeding the acodium. The heads are cylindric, egg-shaped, medium or small. The stalks are glandular, woolly-felted, stiffly hairy. The phyllaries extend forwards, and are narrow, woolly-felted, stiffly hairy, glandular. The ligules are yellow or golden, smooth above, fringed with hairs. The styles are livid or yellow. The margins of the receptacle pits are slightly raised, with cut teeth, or shortly toothed.

Hieracium aggregatum, Backh.—The habitat of this species is rocky streams, margins of alpine streamlets. The stem is erect, reddish, woolly-felted. The primary radical leaves are round, the outer egg-shaped, oblong, elliptic, rounded, pointed at the tip, blunt, narrow below, toothed, the inner egg-shaped, lance-shaped, acute, toothed, the leaf-base running down the stem, the innermost narrow, lance-shaped, acute, stiffly hairy below. There is no stem-leaf or a small one, linear or lance-shaped. The panicle is in a sort of umbel, with 1-2 distant lower, erect, branches, 1-2-headed, the upper branches or stalks aggregate (hence *aggregatum*), spreading, ascending or erect, exceeding the acodium. The stalks are long, erect, woolly-felted. The 4-10 heads are dark-green, rounded, egg-shaped. The phyllaries meet together in bud, and are awl-like, lance-shaped, blunt, the inner linear, lance-shaped, acute, with a pale border, woolly-felted, hairy, glandular. The styles are yellow. The ligules are smooth. The plant is 12-20 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium oxyodus, W. R. Linton.—The stem of this plant is slender, furrowed, purplish, stiffly hairy and woolly-felted. The radical leaves are dull-green, reddish-purple, the outer small, oval to oblong, toothed, the inner oblong to lance-shaped, acute, wedge-shaped below or narrower, toothed below, stiffly hairy below and on the margins. The stem-leaves are 1-2, the lower narrow, lance-shaped, toothed below, narrowed to the winged leaf-stalk, the upper bract-like. The panicle is rather narrowed into a sort of umbel, with erect lower branch, the branches erect, aggregate, in a sort of umbel. The 4-7 or 20 heads are dark, cylindric, egg-shaped, running down the stalk. The stalks are woolly-felted, glandular, hairy. The phyllaries meet together in bud, the outer hairy, triangular, lance-shaped, the inner linear, the innermost narrow, with broad, pale borders, hairy, glandular. The ligules are stiffly hairy at the tip. The styles are dull.

Hieracium pellucidum, Læstad.—The radical leaves of this plant are green with violet markings, transparent, with pin-holes, the outer rounded, heart-shaped, blunt, the inner heart-shaped, egg-shaped, the border finely toothed, the teeth bent back, the innermost egg-shaped, lance-shaped, with acute teeth. The stem-leaf is egg-shaped, lance-shaped, entire or toothed below. The panicle has one or two distant branches, the upper close, spreading, bent inwards. The flower-stalks are woolly-felted, glandular. The heads are short, thick, with a round base. The phyllaries are short, broad, blunt, with a narrow, pale border, senescent, glandular. The ligules are yellow or golden, the inner with a fringe of hairs. The styles are dark or slightly livid.

Hieracium candelabrum, W. R. Linton.—The stem of this plant is stout, purplish, stiffly hairy, woolly-felted, glandular below and above. The radical leaves are deep-green, purple-tinged, the outer heart-shaped to rounded or egg-shaped,

blunt, toothed, the basal teeth bent back, the inner egg-shaped, oval, lance-shaped, shortly, narrowly pointed, with laciniate teeth at the base, which is blunt, stiffly hairy. The leaf-stalks are purple, stiffly hairy. The stem-leaf is stalked, broadly egg-shaped, heart-shaped, lance-shaped, acute, sharply toothed at the base. The panicle is small, with 1-2 lower spreading branches in a racemose corymb, the upper spreading, arching, close. The stalks are short, dull-grey, woolly-felted, glandular. The 5-15 heads are thick, rather long, egg-shaped below. The phyllaries are broad, linear, blunt, the inner narrow, acute, woolly-felted, senescent, glandular. The ligules are smooth. The styles are livid.

Hieracium varicolor, Dahlst.—The stem of this plant is purplish, stiffly hairy below, woolly-felted, glandular above. The radical leaves are broadish, oval, blunt, the base rounded, the inner oval, egg-shaped, oblong, shortly toothed, the innermost egg-shaped, lance-shaped, acute, the upper surface shining, with brown blotches, stiffly hairy both sides. The stem-leaf is stalked, egg-shaped, lance-shaped, with a long, narrow point. The panicle has erect, spreading lower branches, the upper close and in a sort of umbel. The stalks are woolly-felted, glandular. The heads are short, thick, egg-shaped below. The phyllaries extend forwards, are awl-like, linear, blunt, senescent, woolly-felted, glandular. The ligules are light-yellow, strongly fringed with hair. The styles are livid.

Hieracium ciliatum, Almq.—The habitat of this plant is among rocks, cliffs, hedgebanks, &c. The stem is stiffly hairy below, woolly-felted, glandular above. The radical leaves are yellowish-green, stiffly hairy below and on the border, the outer heart-shaped, egg-shaped, and oval, the inner heart-shaped, oblong, blunt, the innermost heart-shaped, lance-shaped, wavy, toothed, the basal teeth bent back, the stalks softly hairy. The stem-leaf is small, bract-like, or egg-shaped, oblong to lance-shaped, sharply toothed. The panicle has distant, lower, suberect branches, the upper closer, spreading, curved. The flower-stalks are woolly-felted, glandular. The heads are dark, cylindric, egg-shaped below. The phyllaries extend forwards in bud, and are oblong, linear, blunt, the inner narrowed, woolly-felted, senescent, glandular, hairy. The ligules are fringed with hairs. The styles are yellow or livid.

Hieracium serratifrons, Almq.—This species is not found in the typical state, but numerous varieties are met with in this country. The stem is stiffly hairy below, woolly-felted, glandular above. The radical leaves are like those of *H. silvaticum*, the outer abruptly narrowed or heart-shaped below, the others running down the stalk, toothed, stiffly hairy below. The stem-leaf is stalked, linear, or egg-shaped, lance-shaped, acute. The panicle is more or less composite, umbellate above. The heads are dark. The phyllaries are rather broad, shorter, and blunt, or longer and acute, glandular, hairy, woolly-felted, and senescent. The styles are yellow or dull.

Hieracium Pictorum, Linton.—The stem of this plant is smooth, reddish, woolly-felted, glandular above. The radical leaves are leathery, reddish-purple, the outer rounded, oblong, broad, egg-shaped, with a narrow point, with large, acute teeth below, glandular, glossy above, stiffly hairy on the strongly-veined under-surface and on the border. The stem-leaf is absent, or there may be 1-2, egg-shaped, lance-shaped, linear, with a narrow point, sharply toothed. The panicle is corymbose, with 2-3 lower, alternate, erect to spreading branches, the upper close, arching, exceeding the acodium. The flower-stalks are straight-based, woolly-felted, glandular. The 3-7 heads are usually large, egg-shaped. The phyllaries meet together in the bud, and are few, dark, blunt, narrowed from a broad base, woolly-felted on the margin, senescent, glandular, hairy. The styles are yellow, with dark, livid hairs. The ligules are hairless. The margins of the receptacle pits are rather raised and toothed. The plant is 1½-2 ft. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium subulatidens, Dahlst.—The stem of this species is stiffly hairy below, woolly-felted, and glandular above. The radical leaves are bright-green, the outer small, broadly heart-shaped, egg-shaped, oval, toothed, the intermediate heart-shaped, egg-shaped, triangular, toothed below, the innermost egg-shaped, lance-shaped, acute, toothed, wedge-shaped below, woolly-felted and stiffly hairy beneath. The leaf-stalks have long, soft hairs. The stem-leaf is stalked, like the inner basal leaves. The panicle has long, ascending lower branches, the upper close, slender, spreading, arching, in a sort of umbel. The flower-stalks are woolly-felted, glandular. The heads are short, egg-shaped below. The phyllaries are dark-green, bent inwards in bud, the outer linear, blunt, the inner linear, acute, woolly-felted, senescent, the innermost awl-like, glandular, stiffly hairy below. The ligules are golden, fringed with hairs. The styles are yellow.

Hieracium crebridens, Dahlst.—The habitat of this plant is rocks, mountain heights. The stem is stiffly hairy, glandular above. The radical leaves are bluish-green, the outer are rounded, egg-shaped, the inner egg-shaped, oblong, lance-shaped, broad, triangular, acute above, toothed below, blunt below, the teeth bent back, the innermost leaves, with laciniate base, running down the stalk, stiffly hairy below. The stem-leaf is stalked, linear, with a narrow point, or absent. The panicle is corymbose, with one or two branches, erect, in a corymb, the upper ascending, close, in a sort of umbel, with spreading, curved flower-stalks. The 2-6 heads are black, large, egg-shaped, rounded below. The flower-stalks are woolly-felted, glandular. The phyllaries are dark-green, extending forwards in bud, long, with a narrow long point from a broad base, with a pale margin, woolly-felted, the inner narrowed, glandular, hairy. The ligules are yellow, with smooth tips. The styles are livid.

Hieracium pollinatum, F. J. Hanb.—The stem of this species is simple or branched, furrowed, hairy below, woolly-felted, glandular above. The radical leaves are green, thick, leathery, smooth above, softly hairy below, fleshy, brittle, boat-shaped, elliptic, the outer blunt, the inner longer, more acute, with small, spreading teeth, narrowed into a slender, winged leaf-stalk. The stem-leaves are small, high on the stem, linear, bract-like, woolly-felted, or when low large, lance-shaped, with a long, narrow point, nearly hairless, stalked, clasping. The panicle is a forked corymb, the upper branches close, exceeding the acodium. The flower-stalks are short, straight, woolly-felted, glandular. The heads are 6-8, with a blunt base. The phyllaries are bent in in bud, dark, broad, short, the outer triangular, elongate, the inner lance-shaped, acute, woolly-felted, glandular. The styles are brownish-olive. The ligule tips are smooth or downy. The margins of the receptacle pits are cut, toothed, the teeth awl-like or bristle-like. The plant is 12-18 in., flowering in July, and is a herbaceous perennial.

Hieracium rubiginosum, F. J. Hanb.—The habitat of this plant is limestone scars. The stem is simple or branched, robust, purplish-red (hence *rubiginosum*), hairy below, woolly-felted, glandular above. The radical leaves are thick, numerous, large, broadly egg-shaped, dull deep green, purple-tinted, acute, lance-shaped, toothed, the base wedge-shaped, stiffly hairy on the paler under surface, and a little on the upper, the margins toothed. The stem-leaves, 1-3, are stalkless, egg-shaped, long, narrow-pointed, lance-shaped, sharply toothed. The panicle is a close, falsely forked corymb, the branches exceeding the acodium. The heads, 4-15, are cylindrical, blunt. The flower-stalks are woolly-felted, hairy. The phyllaries meet together in bud, and are broad, blunt, the inner narrowed, acute, with a pale border, woolly-felted, stiffly hairy, glandular. The ligules are golden, the tips are stiffly hairy at the back. The styles are yellow. The margins of the receptacle pits are raised, toothed, and laciniate. The plant is 1-2 ft. in height, flowering in July till September, and is a herbaceous perennial.

Hieracium holophyllum, W. R. Linton.—The habitat of this plant is limestone cliffs. The stem is reddish or purplish, stiffly hairy below, woolly-felted, hairy above. The 3-7 radical leaves are deep-green, persistent, leathery, broad, oval, egg-shaped to lance-shaped, narrowed to the winged leaf-stalk, entire or finely toothed, stiffly hairy below, and on the border. The stem-leaves are 1-3. The lowest are egg-shaped to lance-shaped, narrowed to the short leaf-stalk, entire, the upper smaller and narrower, with a long, narrow point. The panicle is narrow, with 1-2 lower nearly erect, straight branches, the upper close, or in a raceme. The 2-6 heads are green or blackish-green, short, thick, blunt below. The flower-stalks are woolly-felted, glandular, hairy. The outer phyllaries are triangular, narrow-pointed, the inner broad, linear, lance-shaped, blunt, the innermost acute, woolly-felted on the border, senescent, with purple tips,

glandular, hairy. The tips of the ligules are hairy. The styles are yellowish or livid. The margins of the receptacle pits are cut, toothed, irregularly lobed. The plant is 10-12 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium platyphyllum, Ley.—The habitat of this plant is mountain rocks. The stem is branched, purple, woolly-felted, stiffly hairy below, hairy above. The radical leaves are thick, tinged with purple, broadly egg-shaped, blunt or rounded below, the leaf-stalks long, stiffly hairy, the inner leaves egg-shaped, acute, with arrow-shaped teeth below, woolly-felted, hairy below and on the borders. The stem-leaf is egg-shaped to lance-shaped, toothed. The panicle is a falsely forked corymb, the branches racemose. The 4-7 heads are large, thick, blunt below. The flower-stalks are straight, woolly-felted, glandular. The outer phyllaries are lance-shaped, the inner lance-shaped, linear, blunt, the innermost narrowed, bent inwards, woolly-felted on the margins, senescent, glandular. The ligules are styleo, with smooth tips. The styles are dark-olive. The margins of the receptacle pits are hardly raised, toothed. The stem is 9-24 in. high, flowering from June to August, and is a herbaceous perennial.

Hieracium Breadalbanense, F. J. Hanb.—The stem of this plant is simple or branched, finely furrowed, stiffly hairy below, woolly-felted, hairy above. The radical leaves are yellow-green, paler below, thick, roughly hairy both sides, or nearly hairless, the outer oval, nearly entire, the inner egg-shaped, acute, finely toothed, narrowed to the short, shaggy leaf-stalk. The stem-leaf is shortly-stalked, acute, sharply-toothed, or bract-like. The panicle is a falsely forked corymb, with dichasial branches. The stalks are nearly straight, erect, woolly-felted, hairy. The 3-8 heads are broad, egg-shaped. The outer phyllaries are triangular, lance-shaped, acute, the inner narrower, woolly-felted, hairy. The styles are yellow. The ligules are yellow, with a fringe of hairs at the tip. The margins of the receptacle pits are raised, sharply-toothed. The plant is 12-18 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium riziale, F. J. Hanb.—The habitat of this plant is rocky burns, cliffs. The stem is branched, woolly-felted above, purplish-red, stiffly hairy below, glandular above. The radical leaves are bright-green, the outer rounded, oval, finely toothed, the inner oval, lance-shaped, narrow, acute, narrowed to the shaggy leaf-stalk, sharply toothed below, the innermost coarsely toothed, hairy both sides and on the borders. The 1-2 stem-leaves are egg-shaped, lance-shaped, linear, acute. The panicle is a falsely-forked corymb, with dichasial branches. The flower-stalks are long, arching, thickened at the tip, woolly-felted, glandular, hairy. The 4-10 heads are grey, inversely conical. The phyllaries extend outwards in bud, the outer short, awl-like, acute, the inner long, lance-shaped, linear, acute or blunt, the innermost long-pointed, bristle-like, woolly-felted,

hairy, glandular. The styles are livid, or yellow. The ligules are fringed with hairs. The plant is 12-20 in. in height, flowering from June to August, and is a herbaceous perennial.

Hieracium petrocharis, Linton.—The habitat of this plant is alpine rocks. The stem is finely furrowed, stiffly hairy above and below, woolly-felted, glandular above. The radical leaves are yellowish-green, elliptic, oval, finely toothed, rounded below, the inner egg-shaped to lance-shaped, acute, toothed below, hairy both sides and on the border. The solitary stem-leaf is stalked, egg-shaped to lance-shaped, narrow, long-pointed. The panicle is a falsely forked corymb, the branches racemose. The flower-stalks are arching, ascending, woolly-felted, glandular. The 3-7 heads are greyish-black, egg-shaped. The phyllaries nearly meet together in bud, are narrow, lance-shaped, linear, blunt, the innermost acute, with a pale edge, woolly-felted, senescent, glandular. The ligules are yellow, hairless, fringed with hairs. The styles are livid. The margins of the receptacle pits are toothed, the teeth bristle-like.

Hieracium cymbifolium, Purchas.—The habitat of this species is limestone rocks. The stem is nearly round, stiffly hairy below, woolly-felted, glandular above. The leaves are dull leaden-green, thick, elliptic, oblong, blunt-pointed, heart-shaped, or blunt below, with parallel margins, often hollow (hence *cymbifolium*), toothed below, the inner narrower, acute, long-pointed, the teeth below larger, bent back, the upper and under surface woolly-felted, stiffly hairy below, hairy on the margins. The stem-leaf is small, linear, lance-shaped, with a long, narrow point, large, stalked. The panicle is falsely forked, the upper part in a sort of umbel, with spreading, or divided, arching branches. The 4-8 heads are short, thick, blunt in bud. The flower-stalks are arching, woolly-felted, glandular. The phyllaries are folded inwards, not meeting together in bud, oblong, linear, narrowed, woolly-felted, senescent, glandular. The ligules are deep-yellow, fringed with hairs at the apex at the back. The styles are golden and turn dingy. The margins of the receptacle pits are raised, cut, toothed, irregularly-lobed.

Hieracium sagittatum, Lindeb.—The stem of this species is stiffly hairy below, woolly-felted, glandular above. The radical leaves are green, stiffly hairy below, egg-shaped, oblong, lance-shaped, the inner heart-shaped, arrow-shaped (hence *sagittatum*) below, wedge-shaped, with irregularly-lobed teeth. The 1-2 stem-leaves are stalked, egg-shaped, lance-shaped, sharply toothed. The lower branches of the panicle are long and spreading, the upper curved in a sort of umbel. The flower-stalks are woolly-felted, stiffly hairy, glandular. The heads are cylindric, egg-shaped below. The phyllaries are broad, blunt, the innermost acute, woolly-felted, senescent, hairy, glandular. The ligules are hairless, the inner fringed with hairs. The styles are yellow or dull.

Hieracium sarcophyllum, Stenstr.—The habitat of this species is rocks. The stem is tall, robust, stiffly hairy, or nearly smooth below, woolly-felted, stiffly hairy, glandular above. The radical leaves are numerous, thick, fleshy (hence *sarcophyllum*), dull pale or light yellowish-green, blotched above, the outer elliptic, rounded, egg-shaped, entire, blunt-toothed at the base, which is blunt, the intermediate oblong, egg-shaped, blunt, with wavy teeth, the base blunt, the innermost egg-shaped to lance-shaped, toothed, the base wedge-shaped, stiffly hairy, woolly-felted below, the margins fringed with hairs, leaf-stalks long, woolly-felted, stiffly hairy. The stem-leaf is wedge-shaped or spear-shaped below, toothed. The panicle is close, simple. The upper branches are close, in a sort of umbel, arching. The flower-stalks are short, broad above, woolly-felted, glandular, hairy. The phyllaries nearly meet together and are broad, lance-shaped, linear, blunt, the innermost acute, woolly-felted, the borders white, woolly-felted, senescent, glandular, hairy. The ligules are fringed with hair. The styles are yellow.

Hieracium rotundatum, Kit.—The habitat of this species is rocky mountain burns. The stem is erect, smooth below, stiffly hairy, woolly-felted, glandular above. The outer radical leaves are rounded to egg-shaped, the inner egg-shaped, elliptic, blunt, heart-shaped below, the innermost acute, wedge-shaped below, toothed, the basal teeth bent back, stiffly hairy below and on the margins. The leaf-stalks are long. The 1-2 stem-leaves are heart-shaped, egg-shaped, triangular, acute, entire, toothed below. The panicle bears few heads, with the lower branches distant, arching, the upper close, spreading, arching. The flower-stalks are woolly-felted, glandular, hairy. The heads are long, egg-shaped below. The phyllaries are bent inwards in bud, narrow, linear, blunt, woolly-felted, senescent, glandular, hairy. The ligules are dull-yellow, hairless. The styles are yellow.

Hieracium prætenerum, Almq.—The stem of this plant is stiffly hairy, woolly-felted, glandular above. The radical leaves are green, the primary rounded, heart-shaped, the later oval, oblong, blunt, broadly wavy, toothed, narrowed or wedge-shaped below, the inner narrow to oval, acute, toothed below, the innermost narrow to lance-shaped, toothed, stiffly hairy, woolly-felted below. The stem-leaf is stalked, narrow, long, acute, sharply toothed. The panicle is small, in a sort of umbel above. The flower-stalks are curved, woolly-felted, glandular. The heads are dark-green, small, slender, egg-shaped below. The phyllaries are narrow, linear, acute, extending outwards in bud, the innermost awl-like, woolly-felted at the margin, senescent, glandular, hairy. The ligules are golden, hairless. The styles are yellow.

Hieracium euprepes, F. J. Hanb.—The habitat of this plant is Old Red Sandstone cliffs, ledges, and mountain streams. The stem is simple, or has long, straight branches, and is purplish-red,

stiffly hairy below, woolly-felted and stiffly hairy above. The radical leaves are reddish, the outer egg-shaped to oblong, rounded, the inner egg-shaped, oblong, lance-shaped, blunt-pointed, narrowed to the toothed base, the innermost lance-shaped, narrow, wavy-toothed, acute, long-pointed, stiffly hairy below, fringed with hairs, the leaf-stalks short, shaggy. The 1-2 stem-leaves are nearly stalkless, like the inner basal, the upper linear, lance-shaped, or bract-like. The panicle has 1-2 lower, long, nearly erect branches, the upper exceeding the short-stalked acodium, the stalks and secondaries very short, as though paired. The 4-12 heads are blunt to inversely conical. The phyllaries are greenish or dark-olive, meeting together in bud, linear, lance-shaped, acute, the inner woolly-felted at the edge, hairy, glandular. The ligules are yellow to orange, hairless. The styles are dull-yellow. The plant is 10-18 in. high, flowering from June to August, and is a herbaceous perennial.

Hieracium cæsiu-morum, Fr.—The habitat of this plant is mountain rocks, cliffs, &c. The plant is bluish-green or dull-green, nearly smooth, woolly-felted above. The radical leaves are leathery, bluish-green or white, the outer egg-shaped, oval, oblong, the inner egg-shaped, lance-shaped, narrow, acute, narrowed or wedge-shaped below, toothed, stiffly hairy below. The 1-3 stem-leaves are lance-shaped to linear, toothed. The panicle is a forked corymb, the branches nearly straight, long, arching above. The heads are 3-7, medium, blunt below. The flower-stalks are woolly-felted, glandular, hairy. The phyllaries are awl-like or acute, the inner narrow, acute, extending outward, dark, woolly-felted below, glandular, hairy. The styles are discoloured or yellowish. The margins of the receptacle pits are toothed. The plant is 12-18 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium farrense, F. J. Haub.—The habitat of this plant is basaltic cliffs and rocks. The stem is slender, dark-green, finely furrowed, hairy below, woolly-felted, stiffly hairy above. The radical leaves are few, the earliest withering early, usually 4, broad to lance-shaped, acute, entire, finely toothed, narrowed to the long leaf-stalk. The 2-3 stem-leaves are like the inner basal leaves, stiffly hairy below and on the border. The panicle is falsely forked, the branches alternate, curved, longer than the acodium. The 2-5 heads are egg-shaped. The flower-stalks are long, woolly-felted, glandular, hairy. The phyllaries are short, broad, blunt, woolly-felted, senescent, narrowed above, glandular, hairy. The teeth of the ligule are hairless or downy. The styles are olive-yellow. The margins of the receptacle pits are slightly raised, shortly toothed. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium eristalis, Linton.—The habitat of this plant is rocky slopes, shingle. The stem is stiffly hairy below, woolly-felted above. The radical leaves are green, paler below, lance-shaped, the outer short, rounded, oval, oblong, entire, the

later narrow, egg-shaped to oblong, acute, narrowed both ends, running down the leaf-stalk, entire, scalloped, toothed, stiffly hairy below and on the border. The stem-leaf is stalked like the basal, toothed. The panicle is small, close, falsely forked, with rather erect branches. The few heads are egg-shaped to inversely conical. The stalks are straight, long, woolly-felted, glandular, hairy. The phyllaries are narrow, long-pointed, woolly-felted, senescent, glandular, hairy. The ligules are tipped with stiff hairs. The styles are livid. The plant is 12-18 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium cæsiu-morum, Linddeb.—The habitat of this plant is sub-alpine glens. The stem is wiry, hollow, simple or branched, finely furrowed, reddish, stiffly hairy below, woolly-felted, glandular above. The radical leaves are dull deep-green, bluish-green, with prominent veins below, membranous, the outer withering early, oval, blunt-pointed, toothed, the intermediate egg-shaped, lance-shaped, wedge-shaped below, toothed, the innermost narrower, the point triangular, the base narrow, toothed, nearly smooth below, stiffly hairy below on the nerves, the margins fringed with hairs. The 2-3 stem-leaves have stalks (the lower) like the inner basal, the upper stalkless, toothed. The panicle bears few flowers, with 2-3 erect branches, the upper close, bent in, longer than the acodium. The flower-stalks are straight or curved above, woolly-felted, glandular, stiffly hairy. The heads are short, medium, rounded below. The phyllaries are awl-like, blunt, the inner acute, woolly-felted at the edge, senescent, glandular, hairy. The ligules are hairless. The styles are dull or livid. The margins of the receptacle pits are toothed. The plant is 1-2½ ft. high, flowering from June to August, and is a herbaceous perennial.

Hieracium duplicatum, Almq.—The stem of this species is tall, slender, wavy, stiffly hairy, glandular above. The radical leaves are dull-green, with brown to purple blotches, 3-4, forming a rosette, on long stalks, egg-shaped to oval, oblong, blunt, toothed, the base egg-shaped or wedge-shaped, toothed, the inner lance-shaped to elliptic, narrow, toothed, stiffly hairy, woolly-felted below. The 1-3 stem-leaves are lance-shaped, toothed, or entire. The panicle has 1-2 lower branches erect to spreading, the upper close, erect to spreading, bent inwards. The flower-stalks are straight, unequal, long, slender, paired, the upper longer than the short-stalked acodium, woolly-felted, glandular, hairy. The 3-8 heads are long, blackish-green, conical at length. The phyllaries extend outwards, are narrow, linear to lance-shaped, blunt, the inner with a green border, tipped with purple, the innermost rather acute, glandular, hairy. The ligules are hairless. The styles are yellow, discoloured.

Hieracium unfractiforme, E. S. Marshall.—The habitat of this plant is rocky sub-alpine streamlets, on granite and mica-schist. The stem is rigid, hollow, hairless, woolly-felted, glandular above. The radical leaves are firm, bright-green, bluish-

green, the outer narrow, inversely egg-shaped or lance-shaped, blunt, the base wedge-shaped, finely toothed, the inner lance-shaped, linear, acute, narrow below, toothed, running down the leaf-stalk, stiffly hairy below, fringed with hairs on the margin. The stem-leaf is stalked, narrow to lance-shaped, acute, toothed. The panicle has a straight base with curving branches, longer than the short-stalked acodium. The stalks are nearly straight, woolly-felted, hairy. The 1-4 heads are cylindrical in bud, bell-shaped in flower. The phyllaries are dark, linear to lance-shaped, narrow below, blunt, with a pale border, woolly-felted, senescent, hairy, glandular. The ligules are golden, fringed with hairs. The styles are livid. The achenes are chestnut.

Hieracium dissimile, Lindeb. fil.—The habitat of this plant is mountain glens. The stem is round, tinged with purple, wavy, stiffly hairy, woolly-felted, hairy above. The outer radical leaves form a rosette, and are inversely egg-shaped to spoon-shaped, with a round apex, wedge-shaped below, the margin toothed, the inner elliptic to lance-shaped, narrowed both ends, toothed, hairy below and on the margins. The stem-leaves are 1-3, like the last. The panicle is small, nearly simple, or corymbose, with 2-3 erect to spreading, arching branches, longer than the acodium. The stalks are woolly-felted, stiffly hairy, glandular. The 4-8 heads are thick, egg-shaped. The phyllaries are oblong to linear, narrow above, blunt, the inner acute, with a pale border, woolly-felted, senescent, hairy, glandular. The ligules are yellow, tipped with stiff hairs. The styles are dingy. The plant is 10-18 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium porrigenum, Almq.—The stem of this plant is stiffly hairy, woolly-felted, glandular above. The radical leaves are dull-green, spotted, bluish-green below, the outer oval to oblong, blunt, toothed, narrow below, the inner egg-shaped to lance-shaped, narrow both ends, toothed, the teeth curving forwards and below, purple-spotted, stiffly hairy, woolly-felted, the margins fringed with hairs. The 1-4 stem-leaves are smaller upwards, the lower stalked, egg-shaped to lance-shaped, linear, toothed. The panicle is branching, with close, erect to spreading, arching branches, longer than the acodium. The flower-stalks are rather short, woolly-felted, glandular, hairy. The heads are dark-green, egg-shaped at the base. The phyllaries are linear, lance-shaped, extending outwards, the innermost awl-like, woolly-felted, glandular, hairy. The ligules are yellow, hairless at the tip. The style is yellow, soon discolouring.

Hieracium duriceps, F. J. Hanb.—The habitat of this plant is rocky cliffs and burns, limestone rocks. The stem is wiry, reddish-purple, stiffly hairy below, nearly smooth above. The radical leaves are small, the primary oval to oblong, the later inversely lance-shaped, acute, wedge-shaped below, with 3-6 acute teeth, dull-green, with purple spots, stiffly hairy below. The 1-3 stem-

leaves are narrow, lance-shaped, toothed, the upper linear, entire. The panicle has 2-3 erect, straight branches, the upper spreading, arching, longer than the short-stalked acodium, the stalks are slender, rigid, woolly-felted, hairy. The 2-6 heads are small, hard, inversely conical. The phyllaries are deep-green, awl-like, narrow above, blunt, woolly-felted, stiffly hairy, glandular. The ligules are golden, tipped with stiff hairs. The styles are livid. The plant is 15-20 ft. flowering from June to August, and is a herbaceous perennial.

Hieracium acroleucum, Stenstr.—The habitat of this plant is slate quarries, &c. The stem is slender, rigid, stiffly hairy below, glandular above. The outer radical leaves soon fade, and are oval to oblong, elliptic, entire or toothed, the inner lance-shaped, toothed, acute, narrowed below, stiffly hairy on the nerves below, fringed with hairs at the border. The 2-8 stem-leaves are narrow, lance-shaped, entire, the lower like the inner basal leaves. The panicle has the lower branches erect to spreading, the upper close, ascending, longer than the acodium. The stalks are slender, woolly-felted, glandular, hairy. The heads are slender, long, egg-shaped, rounded. The phyllaries are narrow, linear to lance-shaped, acute, the tips of the inner curved, woolly-felted at the border, senescent, glandular, hairy. The ligules are hairless. The styles are yellow.

Hieracium orcadense, W. R. Linton.—The habitat of this plant is cliffs. The stem is finely furrowed, reddish, stiffly hairy, woolly-felted below, hairy above. The radical outer leaves are oblong to inversely egg-shaped, broad, rounded, narrowed below, the inner lance-shaped, acute, toothed each side, wedge-shaped below, hairy both sides and on the border. The 2-4 stem-leaves are stalked, like the inner basal leaves, with acute teeth. The panicle is close and compact, with close branches, the lower nearly erect, the upper curved, longer than the acodium. The 4-10 heads are dark, cylindric, blunt-based. The stalks are woolly-felted, hairy, glandular. The phyllaries are dark-olive, broad, blunt, with a pale border, senescent, woolly-felted below, hairy, glandular. The ligules are golden, with hairless tips. The styles are pale-olive, then dark-livid. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium orarium, Lindeb fil.—The habitat of this plant is cliffs and banks of streams. The stem is simple or branched, stiffly hairy below, woolly-felted, stiffly hairy above. The radical leaves are few, the outer soon fading, elliptic to narrow at both ends, lance-shaped, oblong, triangular, entire above, the lower with acute teeth, stiffly hairy below and on the borders. There are 2-3 stem-leaves, the lower shortly stalked, lance-shaped, acute, toothed. The panicle is small, with 2-3 arching branches, the upper longer than the acodium. The stalks are stiffly hairy, woolly-felted, glandular. The phyllaries are lance-shaped to linear, blunt, the innermost acute, woolly-felted at the edge, glandular, hairy. The ligules are yellow, stiffly hairy at the tip. The styles are dull-

yellow. The achenes are black. The pappus is white. The margins of the receptacular pits are slightly raised, toothed. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium angustatum, Lindeb.—The habitat of this plant is ravines and mountain pastures. The stem is simple or branched, wavy, smooth or stiffly hairy, woolly-felted above. The radical leaves are narrow, elliptic to lance-shaped, linear, acute, narrowed to the long leaf-stalk, entire or toothed, stiffly hairy below and on the border. The solitary stem-leaf is lance-shaped, acute, linear, bract-like. The panicle is small, forked, with 1-2 nearly erect to spreading branches. The stalks are long, straight, woolly-felted, glandular. The 2-4 heads are small, egg-shaped. The phyllaries are dark, broad below, narrowed, acute, sparingly woolly-felted, glandular, hairy. The ligules are pale-yellow, smooth. The styles are rather livid. The plant is 10-16 in. in height, flowering in July and August, and is a herbaceous perennial.

Hieracium maculatum, Sm.—The habitat of this plant is woods, banks, walls, &c. The stem is erect, hollow, finely furrowed, stiffly hairy. The radical leaves are green, with dark-purple blotches, egg-shaped to lance-shaped, acutely toothed, stiffly hairy both sides and on the border. The leaf-stalks are shaggy. The stem-leaves, 3-5, are nearly stalkless, large like the basal. The panicle is a compound corymb, the upper branches corymbose, longer than the accladum. The stalks have 3 bristle-like bracts, woolly-felted, glandular. The 4-10 heads are egg-shaped, long. The phyllaries are lance-shaped, linear, the inner narrow, woolly-felted, glandular, hairy. The ligules are orange, smooth. The styles are livid.

Hieracium scanicum, Dahlst.—This species is closely allied to *H. irriguum*, Fr., from which it differs in the long white hairs of the stem, the broader, oval, subentire, or less-toothed leaves, the rather thicker heads, narrower phyllaries, and styles more nearly pure yellow.

Hieracium irriguum, Fr.—The stem of this plant is tall, wavy, rigid, stiffly hairy, woolly-felted, glandular above. The radical leaves are green, with violet markings, the outer soon fading, oval, blunt, toothed, the inner oblong to broadly lance-shaped, toothed, wedge-shaped below, stiffly hairy below, the margins fringed with hairs. The 2-5 stem-leaves are smaller above, lance-shaped, rhomboid, acute, toothed. The panicle has the lower branches distant, erect to spreading, the upper close, spreading to arching. The stalks are woolly-felted, glandular, hairy. The heads are small, slender, dark, egg-shaped or inversely conical. The phyllaries are long to triangular, lance-shaped, blunt, the inner lance-shaped, acute, the tips coloured, glandular, hairy. The ligules are hairless. The styles turn colour.

Hieracium sciophilum, Becker.—The habitat of this plant is woods, rocks, and banks. The stem is branched, tall, stiffly hairy below, woolly-felted, glandular above. The radical leaves are dull-

green, broad to egg-shaped, lance-shaped, oblong, acutely toothed, narrow below, limp, stiffly hairy below. The stem-leaves are numerous, like the inner basal leaves. The panicle is a loose corymb, the branches erect to spreading, in a raceme or corymb. The heads are 3 to numerous, large, rounded to egg-shaped. The flower-stalks are woolly-felted, glandular, stiffly hairy. The phyllaries are lance-shaped to linear, blunt, the inner narrowed, woolly-felted on the border, glandular, hairy. The ligules are tipped with stiff hairs. The styles are livid. The plant is 1-2½ ft. high, flowering from June to September, and is a herbaceous perennial.

Hieracium Adlersii, Almq.—The habitat of this plant is river-banks, &c. The stem is simple or branched, finely furrowed, reddish, stiffly hairy, woolly-felted below and above. The radical leaves are few, forming a rosette, the earlier, small, short, egg-shaped, oblong, elliptic, toothed, rounded, blunt below, the inner oval to lance-shaped, broad, blunt, acute, narrowed to the stiffly hairy leaf-stalk, finely toothed below. The 3-5 stem-leaves are like the inner basal, acute, hairless above, hairy below and on the margins, which are purple. The panicle is close, in a corymb, with 1-2 lower, straight, nearly erect branches, the upper ascending. The 3-6 heads are medium, dark, rounded, blunt. The stalks are rather long, straight, woolly-felted, hairy and glandular. The phyllaries extend outwards in bud, and are broad to linear, blunt, the inner long-pointed, with pale borders, glandular, hairy, woolly-felted, senescent. The ligules are orange, hairless. The styles are livid. The margins of the receptacle pits are rather raised, toothed. The achenes are dark brown. The stem is 1-2½ ft. high, flowering in July, and is a herbaceous perennial.

Hieracium septentrionale, Arv. Touv.—The habitat of this plant is rocks by the coast and stream-sides. The plant is short. The basal leaves form a rosette, the lowest soon fading. The stem-leaves are numerous, close, smaller upwards, oval, the apex lance-shaped to triangular, the base narrow, toothed, stiffly hairy below, hairy on the borders. The panicle has 2-3 nearly erect branches, in a loose corymb. The stalks are woolly-felted, glandular. The heads are large, dark, egg-shaped. The phyllaries are narrow, rather blunt, glandular, hairy. The styles are brown. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium cacuminatum, Dahlst.—The stem of this species is tall, robust, stiffly hairy below, woolly-felted. The radical leaves are dull-green, the basal oval to oval-elliptic, with broad, sharp teeth, the inner egg-shaped to elliptic, lance-shaped, awl-like, toothed, narrowed to the long leaf-stalks. The stem-leaves are 4-6, becoming smaller, the lower stalked, egg-shaped, lance-shaped, awl-like, toothed, stiffly hairy below, the margin fringed with hairs. The panicle is narrowed, with distant lower, and close upper branches, all erect to spreading. The flower-stalks are short, woolly-felted, glandular below

the head. The heads are rather broad, darkish-green, blunt below. The phyllaries are rather narrow, linear to lance-shaped, acute, woolly-felted on the border, glandular. The ligules are hairless, the styles dull.

Hieracium diaphanoides, Lindeb.—The habitat of this plant is limestone scars, &c. The stem is finely furrowed, stiffly hairy. The radical leaves are bright-green, membranous, the outer elliptic or oblong, the inner lance-shaped, acute, narrowed to the softly hairy leaf-stalk, acutely toothed below, stiffly hairy both sides, fringed with hairs on the border. The 1-3 stem-leaves are chiefly stalkless, narrow, broad to lance-shaped, long-pointed, sharply toothed. The panicle is tufted, corymbose, with spreading branches, straight-based, ascending, with 2-3 flowers, corymbose, longer than the acodium. The stalks bear bracteoles at the tip, and are woolly-felted, glandular. The 6-15 heads are blackish, narrow, cylindrical, slender. The phyllaries are numerous, blunt, black, glandular, woolly-felted. The ligules are hairless. The styles are yellow or dingy. The margins of the receptacle pits are slightly raised, toothed. The plant is 1½ ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium diaphanum, Fr.—The habitat of this plant is rocky cliffs. The stem is hollow, purplish, stiffly hairy below, glandular above. The radical leaves are oval or oblong, entire or toothed, the inner oblong to lance-shaped, acute, toothed, stiffly hairy below. The 1-3 stem-leaves are lance-shaped, toothed. The panicle has the lower, erect to spreading branches in a raceme, with 3-4 heads, the upper close, nearly erect, rigid, longer than the acodium. The 5-15 heads are small, black, egg-shaped, as if paired, from the short secondary flower-stalk. The stalks are straight, woolly-felted, glandular. The phyllaries are few, broad, blunt, pale-bordered, glandular. The styles are yellow. The margins of the receptacle pits are toothed, with awl-like teeth. The plant is 1-1½ ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium pulchrius, Ley.—The habitat of this plant is mountain cliffs. The stem is short, stout, less leafy than the last, shaggy. The basal leaves are few, forming a rosette, inversely egg-shaped, blunt, narrowed to the shaggy leaf-stalk, toothed, stiffly hairy on the surfaces and margins. The 2-3 stem-leaves are elliptic, or the upper egg-shaped, toothed like the basal. The panicle has 1-2 erect to spreading lower branches, the upper in a sort of umbel. The 4-8 heads are broadly egg-shaped, blunt below. The flower-stalks are nearly straight, woolly-felted, glandular. The phyllaries are linear, lance-shaped, blunt, the inner narrow, acute, with a pale border, thickly glandular. The ligules are golden-yellow, hairless. The styles are yellow. The pappus is tinged reddish-brown.

Hieracium dovense, Fr.—The habitat of this plant is bushy places. The stem is simple or branched, finely furrowed, stiffly hairy, woolly-felted, glandular, hairy. The radical leaves are

green, the earliest short, oval to lance-shaped, blunt, soon fading, the later inversely lance-shaped, rounded above or blunt-pointed, narrowed to the stiffly hairy leaf-stalk, toothed, hairy both sides and on the border. The 3-10 stem-leaves are stalkless or nearly so, like the inner basal, the intermediate egg-shaped to lance-shaped, the uppermost egg-shaped, toothed. The panicle is rigid, in a sort of corymb, the lower branches long, nearly erect, in a corymb, the upper shorter, arching, longer than the acodium. The stalks are woolly-felted, glandular, hairy. The few heads are dark, cylindric, blunt below. The outer phyllaries are short, loose, woolly-felted at the border, the inner linear, lance-shaped, narrowed above, with a pale margin, the innermost nearly acute, hairy, glandular. The tips of the ligules are fringed with hairs. The styles are livid. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium Scullyi, Linton.—The habitat of this plant is rocks. The stem is stout, erect, rigid, hairy below, woolly-felted above. The radical leaves are green, hairless above, pale bluish-green, and hairy below, fringed with stiff hairs, the basal 2-3 in., oval, inversely egg-shaped, oblong, toothed or nearly entire. The 7-16 stem-leaves are broadly inversely egg-shaped to roundly egg-shaped, with a long, narrow point, one-third clasping, toothed. The panicle is a corymb, leafy below, with nearly erect branches, the upper ascending, bent inwards, longer than the acodium. The flower-stalks are woolly-felted, hairy, glandular. The heads are large, few, blunt below. The phyllaries are broad, long-pointed, blunt, the innermost acute, dark-green, with a pale border, woolly-felted below, glandular, senescent. The ligules are yellow, with the tips hairless. The styles are dull brownish-green. The plant is 15-24 in. high.

Hieracium zetlandicum, Beeby.—The habitat of this species is pastures and sheltered rocks. The stem is simple or branched, hairy below, woolly-felted, glandular, hairy above. The basal leaves form a rosette, the earlier are small, oblong to elliptic, the later oval to elliptic, rounded, nearly acute above, toothed, wedge-shaped below, olive-green or tinged with purple, paler, stiffly hairy below and on the borders. The 2-3 stem-leaves are nearly stalkless, like the inner basal. The panicle is close, in a sort of corymb. The 2-4 heads are dark, nearly cylindric, blunt below. The flower-stalks are rather short, straight, woolly-felted, glandular, stiffly hairy. The phyllaries are dark-green, the outer short, broad, blunt, the inner paler, egg-shaped to lance-shaped, broad to oblong, narrowed above, less blunt, glandular. The ligules are orange, hairless. The styles are yellow or brownish. The margins of the receptacle pits are toothed. The achenes are dark red-brown. The plant is 3½-9 in. high, flowering in July and August, and is a herbaceous perennial.

Hieracium Dewari, Boswell Syme.—The habitat of this plant is mountain glens. The stem is stiffly hairy below, woolly-felted, rough, hairy above.

The radical leaves are bright yellowish-green, the earlier forming a rosette, oval, or nearly acute, narrowed to the short, stiffly hairy leaf-stalks, stiffly hairy both sides and on the border. The stem-leaves are 7-9, the lower stalked, narrow to oval, inversely egg-shaped, narrow below, the intermediate oval to oblong, elliptic to lance-shaped, half-clasping; the upper egg-shaped, lance-shaped, with a narrow point, rounded below, toothed, clothed like the leaves of a rosette. The panicle is close, in a sort of corymb, the stalks long, slender, bent inwards, glandular, hairy. The heads are few, numerous, dark, egg-shaped to oblong, nearly cylindric and inversely conical. The phyllaries are united, dark-olive, woolly-felted below, the outer short, triangular to lance-shaped, blunt, closely pressed, the inner lance-shaped to linear, with a pale border, blunt, hairy, glandular. The ligules are tipped with stiff hairs. The styles are dark-brown. The plant is 1-3 ft. high, flowering from July to September, and is a herbaceous perennial.

Hieracium demissum, Strömf., var. *pulchelliforme*, W. R. Linton.—The type of this species does not occur in this country. The stem is stout, stiffly hairy, woolly-felted. The radical leaves are yellowish-green, the outer few soon fading, narrow, oval to inversely egg-shaped, blunt, narrowed to the winged leaf-stalk, toothed below, hairy. The 3-5 stem-leaves are stalkless, the lowest slightly stalked, the lower narrow below, the upper rounded to egg-shaped, acute, toothed. The panicle is small, rigid, in a sort of corymb, the branches straight, equal to or longer than the acodium. The flower-stalks have one or two linear bracts, are woolly-felted, stiffly hairy, glandular. The 2-5 heads are medium, thick, nearly cylindric, egg-shaped below. The phyllaries are the same colour, broad, the outer triangular to lance-shaped, the inner lance-shaped to linear, blunt, the innermost acute, with brown stiff hairs, glandular. The ligules are hairless. The styles are brown.

Hieracium protractum, Lindeb.—The habitat of this species is cliffs. The stem is simple or branched, leafy, purplish-red, stiffly hairy below, woolly-felted, hairy below. The radical leaves are broad to lance-shaped, narrowed both ends, nearly entire or toothed, hairy below, fringed with hairs. The stem-leaves are 3-7, the lower stalked, lance-shaped to oblong, long-pointed, the upper stalkless, clasping, toothed. The panicle is close, in a forked corymb, the branches nearly erect, divided. The flower-stalks are rather long, slender, woolly-felted, with bracteoles, hairy, glandular. The 3-8 heads are small, shortly cylindrical. The phyllaries are dark-green, the outer narrow, triangular to lance-shaped, the broader lance-shaped to linear, blunt, the innermost with a pale border, woolly-felted, senescent, hairy, glandular. The ligules are hairless or the inner fringed with hairs. The styles are yellow. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium truncatum, Lindeb.—The habitat of

this species is cliffs. The stem is smooth, hairy. The radical leaves are egg-shaped, not persisting. The stem-leaves are 4-5, the lower broad to lance-shaped, or inversely so, blunt, narrowed to the half-clasping base, the upper linear to lance-shaped, blunt below. The panicle is cymose, corymbose above, the branches erect to spreading, ascending, the upper longer than the acodium. The heads are large, few, 1-5, black, blunt below. The phyllaries are broad to lance-shaped, blunt, the inner with paler border, woolly-felted, glandular, hairy. The styles are yellow, becoming dark. The plant is 10-24 in. high, flowering in August, and is a herbaceous perennial.

Hieracium perthense, Williams.—The habitat of this species is river-sides. The stem is robust, hairy below, woolly-felted, hairy above. The radical leaves are few, oval, narrowed to the short, winged leaf-stalk, soon fading. The 5-11 stem-leaves are egg-shaped, lance-shaped, toothed, the upper broader, toothed, hairless, dull-green above, paler yellowish-green below, stiffly hairy on the veins and margins. The panicle is nearly terminal, in a corymb or with 2-3 lower, nearly erect branches. The 3-11 heads are nearly round in bud, broad, cylindrical, blunt. The stalks are long, wavy or arching, hoary, hairy. The phyllaries are dark, blunt, the outer egg-shaped to triangular, the inner broad, lance-shaped to linear, the innermost blunt, woolly-felted, senescent, stiffly hairy, glandular. The ligules are tipped with stiff hairs. The styles are livid. The margins of the receptacle pits are raised, toothed. The achenes are dark-brown.

Hieracium gothicum, Fr.—The stem of this species is erect, rigid, simple or branched, hairless or stiffly hairy. The radical leaves are egg-shaped to lance-shaped, nearly entire or finely toothed. There are 5-15 stem-leaves, the lower stalked, toothed, the upper stalkless, bract-like above. The panicle is corymbose, with straight, erect to spreading branches. The heads are few, large, blackish-green, rounded below. The flower-stalks are nearly hairless. The phyllaries are blunt, the inner narrower, woolly-felted at the edge, glandular. The styles are yellow with brown hairs. The plant is 1½ to 4 ft. high, flowering from July to September, and is a herbaceous perennial.

Hieracium stictophyllum, Dahlst.—The stem of this plant is stout, purplish, smooth or stiffly hairy, woolly-felted above. The radical leaves are bluish-green, with purple blotches, the outer narrow to oblong, inversely egg-shaped, blunt, narrow at the base, the lower stem-leaves close, linear to lance-shaped, broad to linear, blunt, narrow below, entire or wavy, or toothed, the stalks winged, the upper smaller, narrow both ends, stalkless, hairless, stiffly hairy on the nerves below. The panicle is rather rigid, with several long, nearly erect, lower racemose branches, the upper close, longer than the acodium. The stalks are straight, woolly-felted, with bracteoles near the apex. The heads are thick, egg-shaped. The phyllaries are numerous, the outer triangular, acute, loose, the

intermediate linear to lance-shaped, narrow above, the innermost with paler borders, blunt, woolly-felted, glandular, hairy. The ligules are yellow, hairless. The styles turn colour.

Hieracium sparsifolium, Lindeb.—The habitat of this plant is cliffs and sides of streams in sub-alpine districts. The stem is simple or branched, reddish, stiffly hairy below, woolly-felted above. The 8-10 stem-leaves are close below, linear to oblong, stalkless or nearly so, blunt, the middle acute, divided, clasping below, the upper with a broader base, all nearly entire, or toothed, dull-green, paler below, hairy. The panicle is small with few heads. The stalks are woolly-felted, spreading, arching, with bracteoles, thickened above. The heads are large, blunt below. The outer phyllaries are loose, ligulate, the inner lance-shaped to linear, with a broad base, the sides parallel, blunt, the innermost nearly acute, hairy, glandular. The styles are brown. The plant is 6 in. to 2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium cantianum, F. J. Hanb.—The stem of this plant is finely furrowed, dark-purple, stiffly hairy, woolly-felted above. The 12-20 radical leaves are deep-green, bluish-green below, the lower elliptic to lance-shaped, blunt, rounded, narrowed to the winged, shaggy leaf-stalk, the upper stalkless, broad, rounded below, egg-shaped to elliptic, lance-shaped, blunt, toothed, the uppermost acute, woolly-felted, hairy below. The panicle has long, erect to spreading, lower branches, the upper longer than the acodium. The stalks bear bracteoles below, are woolly-felted, stiffly hairy, arching above. The heads are numerous, small, egg-shaped, near cylindrical. The phyllaries are triangular to lance-shaped, the innermost narrower, blunt, the outer woolly-felted, senescent, the inner pale-bordered, hairy, glandular. The styles are yellow. The margins of the receptacle pits are raised, sharply toothed.

Hieracium rigidum, Hartm.—The habitat of this plant is mountain glens and banks of streams. The stem is purplish, simple or branched, stiffly hairy, rough, woolly-felted. There are 6-10 stem-leaves. The lower are long, tongue-shaped, lance-shaped, toothed, the upper narrow to lance-shaped, toothed, narrow below, clasping, stiffly hairy, woolly-felted below. The panicle is a racemose corymb, the branches straight below, arching, the upper close, in a sort of umbel. The 8-14 heads are nearly cylindrical, egg-shaped below. The outer phyllaries are linear, loose, blunt, the inner narrow to lance-shaped, less blunt, parallel, pale-bordered above, woolly-felted below, glandular, hairy. The styles are brown. The plant is 1-2½ ft. high, flowering from July to September, and is a herbaceous perennial.

Hieracium prenanthoides, Vill.—The habitat of this plant is rocky places on the margins of streams and woody ravines. The stem is leafy, erect, stiffly hairy below, hairy above. The leaves are numerous, all clasping, net-veined, bluish-green below, hairy both sides, the lowest nar-

rowed into the winged auricled leaf-stalks, the intermediate pinched above their base, the uppermost heart-shaped to lance-shaped, bract-like above, the lowest entire, the upper finely toothed, nearly smooth or stiffly hairy, fringed with hairs. The panicle is in a sort of raceme. The branches are long, erect to spreading, ascending, racemose to corymbose. The flower-stalks are woolly-felted, glandular. The heads are numerous, small, nearly cylindric. The outer phyllaries are short, narrow, the 2 inner narrow to lance-shaped, blunt, woolly-felted, hairy, glandular. The ligules are stiffly hairy, fringed with hairs. The styles are dark-livid or brown. The achenes are bright reddish-brown. The margins of the receptacle pits are raised, cut, toothed. The plant is 1-3 ft. high, flowering from July to September, and is a herbaceous perennial.

Hieracium strictum, Fr.—The habitat of this plant is mountain glens and rocky places by the banks of streams and ravines in mountainous districts. The stem is leafy, rigid, green, stiffly hairy below. The leaves are dull deep-green, the lower inversely lance-shaped, narrowed into the winged leaf-stalk, the middle oblong to lance-shaped, narrowed below, auricled, clasping, finely toothed, nearly entire, the upper rounded below, half-clasping, all nearly hairless or stiffly hairy, paler, glossy, net-veined below. The panicle is rigid, the branches and stalks straight, nearly erect, long, the stalks little thickened above. The heads are few, large, broad, nearly cylindric in bud, blunt below. The phyllaries are broad, blunt, the outermost narrow, the intermediate triangular, long, the inner lance-shaped to linear, stiffly hairy, woolly-felted and glandular. The tips of the ligules are fringed with hairs. The margins of the receptacle pits are cut, toothed, irregularly lobed. The achenes are chestnut. The plant is 1-3 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium corymbosum, Fr.—The habitat of this plant is mountainous districts, stream-sides. The stem is rigid, very leafy, reddish-purple, woolly-felted above. The leaves are numerous, bluish-green, netted below, the lower inversely lance-shaped, with shortly-winged leaf-stalks, the middle narrow, egg-shaped to oblong, lance-shaped, with a long, narrow point, clasping, all toothed, with the margins fringed with hairs, nearly hairless. The panicle is a broad, compound, leafy corymb. The flower-stalks are woolly-felted, with bracteoles. The heads are large, narrow, egg-shaped below. The outer phyllaries are narrow, loose, the inner linear to lance-shaped, blunt, glandular, with pale borders. The styles are livid. The pappus is reddish. The plant is 2-4 ft. high, flowering from July to September, and is a herbaceous perennial.

Hieracium auratum, Fr.—The habitat of this plant is mountainous districts. The stem is erect, rigid, leafy, branched, reddish, woolly-felted, and stiffly hairy. The leaves are brownish-green above, bluish-green below, the lower egg-shaped to lance-shaped, oblong, narrow below, toothed,

the upper more egg-shaped, the base rounded, half-clasping, net-veined, woolly-felted above, stiffly hairy below. The panicle is leafy, in a sort of corymb, with 2-3 lower erect to spreading branches, the upper close, ascending. The flower-stalks have bracteoles above, woolly-felted. The heads are few or numerous, medium to large, egg-shaped below. The phyllaries are dark-green, lance-shaped to linear, blunt, the inner pale-bordered above, blunt, woolly-felted, glandular, hairy. The styles are yellow. The margins of the receptacle pits are toothed. The plant is 2-3 ft. high, flowering from July to September, and is a herbaceous perennial.

Hieracium crocatum, Fr.—The habitat of this plant is mountain districts, banks of streams, and ravines. The stem is rigid, rather rough, stiffly hairy. The leaves are oblong to lance-shaped, the lower narrowed to the clasping leaf-stalk, the upper broader, blunt below, half-clasping, toothed, paler, net-veined, falsely 3-nerved below, hairless, or hairy. The panicle is small, in a sort of corymb, with 2-3 straight, nearly erect, lower branches, the upper spreading, ascending, close. The flower-stalks are woolly-felted, hairy. The 5-12 heads are large, glossy, brown, nearly cylindrical, blunt below. The phyllaries are dark, closely pressed, broad, narrow-tipped, blunt, the outer few, lance-shaped, the inner linear to lance-shaped, paler below, woolly-felted, glandular, hairy. The ligules are hairless. The styles in Scottish specimens are livid. The plant is 1½-2 ft. high, flowering in July and August, and is a herbaceous perennial.

Hieracium maritimum, F. J. Hanb.—The stem of this plant is erect, tall, rigid, reddish-purple, stiffly hairy, woolly-felted, rough above. The leaves are leathery, dark-green, crowded, the lowest spreading, inversely egg-shaped, rounded to blunt above, shortly stalked, the rest erect, linear to oblong, lance-shaped, nearly acute, abruptly narrowed, clasping below, entire or finely toothed, stiffly hairy. The panicle is a raceme-like corymb. The heads are 1-10, leafy below, the branches straight below, arching. The flower-stalks are very woolly-felted, stiffly hairy. The heads are very dark, short, broad, nearly blunt. The phyllaries are short, broad, very blunt, the outer triangular, the inner oblong to linear, lance-shaped, woolly-felted, hairy, the inner paler. The ligules are yellow-orange, hairless. The styles turn colour. The plant is 1-3 ft. high, flowering in July, and is a herbaceous perennial.

Hieracium sabaudum, L.—The habitat of this plant is hedgebanks, copses, damp thickets, woods, rocky places, banks of streams, lochs and loughs, railway banks, heaths, &c. It is common on shale, sand, and grit, less so on limestone scars. The stem is rigid, hairy, often leafy below, slender or thickened, round, finely furrowed, red below, stiffly hairy, branched above. The leaves are numerous, close, soft, olive-green, flat, toothed, with teeth directed forwards, long-pointed, the lower leaves linear to lance-shaped, close, stalked, the stalks winged, hairy, the middle

and upper leaves broadly lance-shaped, all stiffly hairy both sides, or shining, hairless above. The branches are loosely panicled, the upper often close, the others distant. The flower-stalks are woolly-felted or grey. The heads are medium, with long stalks. The acodium is 20-25 mm. The bracts are 3-4, linear. The flowerhead is egg-shaped, rounded below, the phyllaries green-bordered, wide, stellately woolly-felted. The receptacle pits are irregularly lobed. The ligules are yellow to golden. The styles are livid. The achenes are purplish-black.

Hieracium Ogweni, Linton.—The habitat of this plant is sandy and stony places. It is regarded as synonymous with *H. subumbellata*, Williams, of *H. umbellatum*, L., by Mr. F. N. Williams (Prodri., p. 174). The leaves are fewer than in *H. umbellatum*, L., the upper stalkless, the lower narrowed into leaf-stalks, the panicle being narrowed into a corymbose panicle, subumbellate, the tips of the phyllaries straight, not bent back, nearly hairless, not hairy, or slightly woolly-felted, hairy.

Alpine Sowthistle (*Lactuca alpina*, Hook. = *Sonchus caeruleus*, Sm.).—The habitat of this plant is alpine rocks. The plant has the rosette habit. It is smooth, the inflorescence glandular, hairy. The stems are stout, simple, smooth below, leafy, succulent, grooved. The leaves are arrow-shaped, lyrate or runcinate, with a large triangular, spear-shaped, terminal lobe, and acute, broad, membranous. The leaves are smaller above, broadly ovate, heart-shaped, acute, short-stalked on the barren shoots. They are narrowed into half-clasping, auricled, winged leaf-stalks. The flowerheads are blue, in racemose heads, small, numerous, simple or branched, hispid, with stalked, jointed hairs. The flower-stalks are ascending, and bear bracts. The involucre is glandular, hairy, subcylindrical, the phyllaries linear. The achenes are oblong, not narrowed, ribbed, slightly flattened. The plant is 2-4 ft. high, flowering from June to August, and is a herbaceous annual or perennial.

ORDER ERICACEÆ

Black Bearberry (*Arctostaphylos alpina*, Spr.).—The habitat of this plant is dry, barren Scottish mountains. The plant has the shrub habit, and is prostrate, then ascending, forming woody patches. The branches are stout, leafy, interlacing, depressed, with scaly bark. The stem is long, trailing. The leaves are spoon-shaped, inversely egg-shaped or lance-shaped, thin, wrinkled, scalloped, toothed above the middle, fading but persistent, in terminal clusters, with a short stalk, the nerves netted, fringed with hairs. The flowers are 2-3, in terminal drooping racemes, white, hairy round the mouth, appearing with the young leaves, on short stalks. The bracts are fringed with hairs. The calyx is small. The corolla has 4-5 lobes, downy within. The anther-stalks are awl-like, the anthers brown, with small, short, awned appendages. The berry or drupe is black, smooth.

The plant is 3-12 in. high, flowering from May to July, and is a perennial shrub.

Azalea (*Azalea procumbens*, Desv.).—The habitat of this plant is Scottish alps, the summits of Highland mountains. The plant has the shrub habit. The stem is woody, prostrate, then ascending, spreading, forming flat patches, with interlacing, rigid branches. The leaves are leathery, rigid, the margins bent-back, small, opposite, crowded, oblong, linear, blunt, deep-green, glossy, channelled above, densely downy below, with a very stout midrib. The flowers are 2-3, rose-colour, in terminal clusters, inclined, small, on simple, red, stout stalks, without bracteoles. The sepals are red, egg-shaped to lance-shaped. The pink corolla has blunt lobes. The capsule is very small. The plant is 2-4 in. high, flowering from May to July, and is a perennial shrub.

ORDER GENTIANACEÆ

Spring Gentian (*Gentiana verna*, L.).—The habitat of this plant is wet subalpine limestone rocks, limestone covered with grass, peaty pastures. The habit is prostrate. The plant is tufted, stoloniferous. The aerial stems are rooting, ending in a tuft of leaves, with scapes 1-flowered, with 1 or 2 leaves only, curved or ascending. The leaves are ovate, oblong, the radical ones forming a rosette, blunt or more or less acute, 1-nerved, the stem-leaves oblong, few, smaller. The flowers are large, bright-blue, solitary, not stalked. The bracts are leafy. The calyx bears 2 bracts, with 5 equal, sharp, teeth or lobes, 5-winged, with prominent angles, the tube larger. The corolla is salver-shaped, 5-cleft, the lobes ovate, blunt, with small intermediate lobes, which are divided into 2 nearly to the base, and the throat is naked, with a scale between the lobes. The capsule is nearly stalkless. The plant is 1-3 in. high, flowering from April to June, and is a herbaceous perennial.

Small Alpine Gentian (*Gentiana nivalis*, L.).—The habitat of this species is summits of Scottish mountains. The plant has the rosette habit more or less. The stems are slender, branched or simple, erect. The radical leaves are few, inversely ovate, oblong, elliptic, blunt or acute. The stem-leaves are smaller, in distant pairs, 3-5-nerved. The flowers are bright light-blue, solitary or few, shortly-stalked. The small bracts are oblong. The calyx is cylindrical, narrow to bell-shaped, with 2 bracts, the 5 awl-like lobes equal, 5-angled or keeled, and ribbed. The corolla is funnel-shaped, 5-cleft, the lobes ovate, blunt, with small, intermediate, bifid scales, the throat naked. The capsule is more or less stalkless. The plant is 1-6 in. high, flowering in July and August, and is a herbaceous annual.

ORDER BORAGINACEÆ

Mountain Scorpion Grass (*Myosotis alpestris*, Schmidt = *M. pyrenaica*, Pourret = *M. rupicola*, Sm.).—The habitat of this plant is moist rocks,

mountains. The radical leaves are long-stalked, pointed, oblong, lance-shaped, the stalks slender. The flowers are large, blue, at night sweet-scented. The calyx is deeply 5-cleft, the hairs not at all straight, with some curved, appressed bristles, and narrow, acute, below, open in fruit. The ultimate flower-stalks are ascending. The limb of the corolla is longer than the tube, flat. The fruit-stalks are not so long. The style is half as long as the calyx. The nutlets are black, keeled, not rounded at the end. The plant is 4-10 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER SCROPHULARIACEÆ

Purple Toadflax (*Linaria purpurea*, Mill.).—This plant has long been in cultivation in England and established in many places, old walls, waste ground, near towns. The habit is erect. The plant is smooth. The stem is leafy. The leaves are linear, lance-shaped, scattered, the radical leaves irregularly in fours. The flowers are purple, in long, narrow racemes. The sepals are linear, not so long as the capsule. The corolla has a long, incurved spur, 2-3 times as long as the flower-stalks. The lips may be purple, the flower yellow otherwise. The seeds are angular, netted. The plant is 1-3 ft. high, and flowers in July and August, being a herbaceous perennial.

Great Snapdragon (*Antirrhinum majus*, L.).—This plant is an alien, which has become naturalized in many places, as on old walls and calcareous cliffs, being an escape from gardens, where it has been long cultivated generally. The habit is erect. The plant is shrubby, branched, smooth below, glandular, downy above. The stems are stout and woody. The leaves are oblong, linear, lance-shaped, opposite or alternate, devoid of hairs. The flowers are purple, white, yellow or crimson, in dense racemes, glandular, downy, with ovate, narrow-pointed bracts. The ultimate flower-stalks are erect. The sepals are ovate, unequal, blunt, shorter than the corolla. The palate is yellow, the upper lip divided into two nearly to the base. The spur is hairy within. The capsule is glandular. The seeds are black or brown, longitudinally ribbed, prickly, oblong, ovoid. The plant is 1-2 ft. high, flowering from July to September, and is a herbaceous perennial.

Alpine Speedwell (*Veronica alpina*, L.).—The habitat of this plant is lofty Scottish mountains, springs, and rills. The habit is prostrate, then erect, much as in *V. serpyllifolia*. The stem is scarcely rooting, simple, except below, glandular, downy above. The leaves are elliptic, egg-shaped, entire or toothed. The lower leaves are smaller. The flowers are dark-blue, in a dense, raceme-like corymb, few, hairy with spreading hairs. The sepals are narrow, more or less acute, half as long as the capsule, which is obscurely notched, on short, erect stalks. The bracts are alternate. The capsule is inversely egg-shaped. The seeds are plano-convex. The style is short. The upper part of the stem and calyx is dingy-

blue. The plant is 3-10 in. high, flowering in July and August, and is a herbaceous perennial.

Procumbent Speedwell (*Veronica saxatilis*, L. = *V. fruticans*, Jacq.).—The habitat of this plant is the highest Scottish alps, exposed alpine rocks. The habit is prostrate. The plant is more or less devoid of hairs. The stem is woody, with numerous branches, ascending, with leafy barren shoots. The leaves are oval, elliptic, the lower smaller, inversely ovate, the upper oblong, coarsely toothed to the middle, leathery, the teeth few or none. The flowers are large, bright-blue, in more or less corymb-like racemes, with few flowers, downy, hairy, without glands, the hairs crisped. The bracts are more or less opposite. The sepals are linear to oblong, blunt, not so long as the capsule. The flower-stalks are long and erect. The ultimate flower-stalks are stiff. The style is short and slender. The capsule is oblong, ovate, narrow-pointed, the valves bifid, the seeds nearly flat. The plant is 2-4 in. high, flowering in July and August, and is a herbaceous perennial.

Alpine Bartsia (*Bartsia alpina*, L.).—The habitat of this plant is alpine pastures, subalpine meadows, and wet banks. The habit is creeping. The plant is a semi-parasite, glandular, downy, the rootstock woody. The stem is simple, erect, square or round, leafy. The leaves are opposite, stalkless, egg-shaped, bluntly toothed, the upper heart-shaped, clasping, leathery, blunt. The bracts are purplish. The flowers are bluish-purple, in a short, dense, leafy spike, downy. The calyx is purplish, clamy, with egg-shaped to lance-shaped lobes. The lips of the glandular corolla are small. The anthers project, and are hairy and bearded. The capsule is longer than the sepals. The seeds are small, numerous, winged. The plant is 4-8 in. high, flowering from June to August, and is a herbaceous perennial.

Rhinanthus borealis, Druce.—The habitat of this plant is Scottish mountain pastures, corries. The habit is erect, the stem simple, densely hairy, with no black striæ, the internodes more or less long. The stem-leaves are shorter at the internodes, lance-shaped, the lower leaves egg-shaped, blunt. The bracts are green and rough. The calyx is downy, the corolla dark treacly-yellow. The plant is 2-4 in. in height, flowering in July and August, and is an annual semi-parasite.

Rhinanthus Drummond-Hayi, Druce.—The habitat of this plant is meadows and pastures, lofty Scottish mountains. The plant is of Scottish type, found in 6 vice-counties. It is 2-4 in. high, flowering in July and August, and is an annual semi-parasite. The habit is erect. The stem is unbranched, hairy, not striate. The leaves are narrow, linear. The calyx is downy. The corolla is dark-yellow.

ORDER LABIATÆ

Crimson Germander (*Teucrium Chamædrys*, L.).—The habitat of this plant is old walls, &c., near houses, sandy fields in Ireland. The habit is ascending. The plant is hairy. The rootstock is

creeping and bears stolons. The stems are hairy, much-branched, leafy, woody below. The leaves are ovate, stalked, cut, scalloped, wedge-shaped, narrowed into the leaf-stalk, with prominent veins below, entire below, green both sides. The flowers are purple or rose-colour, in a raceme, 5 in a whorl, in the axils of bracts. The lower bracts are entire, stalkless, leaflike, purplish, the upper smaller, broader below. The calyx-teeth are lance-shaped, straight, triangular, the calyx nearly equal below, and the lower lip of the corolla is spotted white and red. The nutlets are smooth. The plant is 6-18 in. high, flowering from July to September, and is a herbaceous perennial.

Ajuga pyramidalis, L.—The habitat is alpine shady places. The habit is erect. The whole plant is hairy. There are no runners. The flowers are purplish-blue, in compound pyramidal spikes. The calyx is woolly. This alpine bugle grows to a height of 1 ft. It flowers from May to July, and is a herbaceous perennial.

ORDER POLYGONACEÆ

Alpine Knotweed (*Polygonum viviparum*, L.).—The habitat of this plant is mountain alpine pastures, wet alpine rocks. The habit is erect. The stem is simple, slender, with a slender rootstock. The plant is hairless. The leaves are narrowed below, linear, lance-shaped, with margin rolled back, the radical leaves narrow, linear to oblong, elliptic, the stalks without wings as long as or shorter than the leaves, which are more or less acute, bluish-green. The few upper leaves have shorter stalks. The flowers are white or pink, in a slender, loose, blunt, terminal spike-like raceme, bulbiferous below, with red bulbs. The fruit rarely matures. The face of the nut is egg-shaped, shining, smooth, lance-shaped. The plant is 4-8 in. high, flowering from June to August, and is a herbaceous perennial.

Mountain Sorrel (*Oxyria digyna*, Hill = *O. reniformis*, Hook.).—The habitat of this plant is mountain rocks and streams, wet, rocky places. The plant has more or less the rosette habit. It is devoid of hairs, fleshy, acid in taste. The rootstock is tufted. The stems are usually leafless, nearly simple, and stout. The radical leaves are kidney-shaped or heart-shaped, long-stalked, rounded, notched at the extremity. The veins radiate from the end of the leaf-stalk. The stem-leaves are solitary. The panicle is a spike-like raceme, slender, leafless, loose, the ultimate flower-stalks slender, jointed in the middle, thickened above. The outer perianth-segments are spreading or bent-back, the inner spoon-shaped, with 3-5 nerves. The fruit has a round to heart-shaped wing, and is membranous, veined, notched at the end. The plant is 4-8 in. high, and flowers from June to August, being a herbaceous perennial.

ORDER ARISTOLOCHIACEÆ

Birthwort (*Aristolochia clematitis*, L.).—This plant is rare and not indigenous, being found in

BRITISH FLORA

hedges, on old walls near gardens, former religious houses, ruins, and waste places. The habit is creeping, then erect. The rootstock is woody. The plant is devoid of hairs. The stems are erect, simple, numerous, angled. The leaves are broadly heart-shaped, blunt, with a short point, netted, smooth, bluish-green beneath, with rounded auricles, incurved, and nearly overlapping. The flowers are 4-8, in a cluster, pale-yellow, on very short stalks, more or less erect. The calyx is yellow, with a slender curved tube, rounded below. The lip is oblong or ovate, the throat swollen. The corolla is pear-shaped. The flower-stalks are bent-down. The fruit is a 6-valved capsule, the seeds nearly round, flattened, granulated, excavated on the ventral face. The plant is 1-2 ft. high, flowering in July and August, and is a herbaceous perennial.

ORDER SALICACEÆ

Black Willow (*Salix nigricans*, Sm.) — The habitat of this plant is rocks, mountains, banks of streams and rivers, osier ground. The plant has the tree or shrub habit, prostrate, then ascending, or erect. The shoots are downy, dull-coloured. The leaves are ovate, oblong, elliptic, lance-shaped, thin, downy, bluish-green below, entire or coarsely toothed, acute, netted above, turning black when dry. There are no stipules, or, if present, they are half-heartshaped, with a straight point and a basal gland. The ovoid, or cylindric, erect catkins appear before or after the leaves, are stalkless or stalked, and the scales are linear, oblong, softly hairy, acute or blunt. The anther-stalks are hairy below, and the ovary is silky. The style is distinct, slender, and long. The capsule is narrowly conical, smooth or woolly, with a slender stalk. The plant is 6-10 ft. high, flowering in April and May, and is a perennial shrub.

Tea-leaved Willow (*Salix phyllicifolia*, L.) — The habitat of this plant is rocks and mountain streams, and valleys. The plant has the tree or shrub habit. The branches are spreading, shining, chestnut, the shoots smooth at length, dark-green above, shining, bluish-green below (like the leaves), bright chestnut. The leaves are ovate, oblong, elliptic, lance-shaped, smooth, shining above, bluish-green below, thick, black when dry, not dotted or wrinkled. The stipules are very small or absent. The catkins are stalkless, with bracts. The scales are linear, oblong, acute, black. The ovary is silky. The style is distinct. The capsule has a long beak. The plant is 10 ft. high, flowering earlier than other species in April and May, being a perennial shrub.

Woolly Broad-leaved Willow (*Salix lanata*, L.) — This plant is found on alpine cliffs and by rills, Scottish mountains. The plant has the shrub habit. The branches are twisted, the twigs woolly. The buds are large, black, and stiffly hairy. The leaves are leathery, shaggy or woolly below, broadly oval, oblong to lance-shaped, acute, entire, with raised netted veins. The leaf-

stalk is very short. The stipules are large, oval, half-heartshaped, glandular-toothed. The catkins are terminal, stalkless, in flower with the leaves, stout, dense, silky with yellow hairs, ashy-white, the male not so long as the female. The scales are black, oblong, blunt, hairy with golden hairs. The stamens are hairless. The ovary is conical, smooth. The style is long. The capsule is smooth, shortly stalked. The plant is 1-3 ft. high, flowering from May to August, and is a perennial shrub.

Downy Mountain Willow (*Salix lapponum*, L.) — The habitat of this plant is alpine rocks. The plant has the shrub habit. It is dwarf, erect or prostrate. The branches are brown, stout, with woolly buds. The leaves are elliptic, lance-shaped, inversely ovate, long-pointed, dull-green, silky above, cottony below, entire or wavy-toothed, netted, with straight, raised veins, wrinkled, the margins curved back. The leaves are downy when young. The stipules are small or may be absent. The leaf-stalk is long with a dilated base. The catkins appear before the leaves, and are nearly stalkless, with bracts. The male are ovoid, with black scales and yellow anthers, the female longer. The scales are acute, with a felt of long, white hairs. The style is cleft, slender, very long. The stigmas are linear. The ovary is ovate, lance-shaped, silky. The capsule is woolly, conical, hardly stalked. The plant is 2-5 ft. high, flowering from June to July, and is a perennial shrub.

Whortle-leaved Willow (*Salix myrsinifolia*, L.) — The habitat of this plant is alpine rocks and rivulets, Scottish mountains. The habit is the shrub habit. The plant is dwarf, rigid, somewhat erect, or creeping, much-branched, the younger parts downy. The leaves are small, dark-green, glossy, rigid, ovate, elliptic, lance-shaped, netted both sides, the veins prominent, coarsely toothed, glandular hairy, acute. The leaf-stalk is very short. The stipules are ovate, lance-shaped, toothed. The catkins are terminal, appearing with or after the leaves, on stout, leafy stalks. The male catkins are oblong, ovoid. The scales are spoon-shaped, softly downy. The disk is large. The anthers are ultimately black. The stigmas are thick. The style is very long. The ovary is hardly stalked, ovate, awl-like, downy. The capsule is hairy or downy, stalked. The plant is 1-2 ft. high, and flowers in June and July, being a perennial shrub.

Salix sadlerii, Sm. = *S. herbacea* × *S. lanata*. — The habitat of this plant is rocky ledges. The habit is the shrub habit. The plant is dwarf. The branches are prostrate, leafy, few, twisted, with shining, reddish-brown bark, and woolly shoots. The leaves are small, roundly ovate, more or less heart-shaped, more or less acute, entire, smooth, cottony above, netted, smooth below, dark-green, the young leaves cottony below. There are no stipules. The catkins are terminal, cylindrical, many-flowered. The leaf-stalks are woolly, without leaves. The scales are oblong, blunt, at length woolly, dark-brown, not so long as the

capsules. The style is short. The stigmas are linear, lobed. The ovary is downy, with long woolly stalks. The capsules are hairless, conical to ovoid. The plant flowers in August, and is a perennial shrub.

Salix arbuscula, L.—The habitat of this plant is rocks, mountains. The plant has the shrub habit. The plant is small, rigid, prostrate, rooting. The twigs are yellow downy, then brown. The leaves are ovate, lance-shaped, smooth, shining above, with small teeth, bluish-green, opaque below, 1-veined, long-pointed, at first silky below. The catkins are cylindrical, lateral, on stalks bearing bracts, those of the female longer. The scales are inversely ovate to rounded, reddish, blunt, downy. The capsules are conical, reddish, the scales covering the base. The ovary is oblong to ovate, silky. The stigmas are lobed, and thick. The style is long, deeply-cleft. The plant is 1-2 ft. high, flowering in June and July, and is a perennial shrub.

Least Willow (*Salix herbacea*, L.).—The habitat of this plant is alpine mountains. The plant has the shrub habit, but is very dwarf, herbaceous in appearance. The branches are subterranean, spreading under the ground and stones, giving rise to twigs, with few leaves and flowers. The bud scales, which are brown, are persistent. The leaves are round, smooth above, oblong, blunt or notched, shining, netted, not wrinkled, coarsely-toothed, shortly-stalked, curled, green below. The stipules are ovate, small, or absent. The catkins are oblong, few-flowered, crimson, on 2-leaved stalks, and appear with the leaves. The scales are blunt, smooth or downy, inversely ovate, concave. The ovary is more or less stalkless, ovate to conical, smooth. The stigmas are lobed. The style is short. The anthers are yellowish-brown or purple. The capsule is downy. The plant is 2-6 in. high, flowering in June and July, and is a perennial shrub.

Little Wrinkled Willow (*Salix reticulata*, L.).—The habitat of this plant is Scottish mountains. The plant has the shrub habit. The stem is subterranean, dwarf, short, woody, much branched, the branches twisted, sparingly leafy. The leaves are rounded, oblique, strongly veined each side (hence *reticulata*), wedge-shaped, blunt, or notched, green above, bluish-green below, the margin entire or wavy, the young leaves hairy, the older hairless, and rough above, hoary below. There are no stipules. The catkins are oblong, many-flowered, more or less terminal, on long, leafy stalks, flowering after the leaves. The scales are inversely egg-shaped, purple or yellow. The anthers are purple. The disk is an irregularly lobed cup. The style is short, the stigmas are 2-lobed. The capsule is stalkless, hoary, blunt. The plant is 6-24 in. long, flowering in June and July, and is a perennial shrub.

ORDER ORCHIDACEÆ

Helleborine atrorubens, Roehl. = *H. ovalis*, Bab. = *H. atropurpurea*, Druce.—The habitat of

this plant is limestone cliffs, &c. The habit is like that of *H. latifolia*, but the plant is not so large. The stem is solitary. The leaves are small, egg-shaped to oblong, acute, the upper lance-shaped, the lowest bracts smaller than the leaves, longer than the flowers, but not so long as the fruit. The sheaths are funnel-shaped, close. The flowers are small, dingy-purple, dark-yellow to blackish-red. The stalk is shorter than the downy ovary. The label is oval, scalloped, acute, blunt-pointed, the hunches raised, folded, scalloped above. The plant is 6-18 in. high, flowering in July and August, and is a herbaceous perennial.

ORDER LILIACEÆ

Wild Leek (*Allium Ampeloprasum*, L. = *A. holmense*, Mill.).—This plant is naturalized, and grows on rocky banks, waste places. The plant has the lily habit. The stem is leafy below. The bulb is large, with stalked bulbils or offsets, and compound. The leaves are keeled, linear, in two rows, folded, with rough edges. The sheaths are cylindrical. The scape is stout. The spathe has a flattened, long beak, falling off, entire. The flowers are numerous, in a round, compact umbel, pale-purple or greenish-white, on unequal stalks. The perianth is white or greenish, the keel of the outer segments roughish. The stamens project, and the anther-bearing point has 3-pointed filaments as long as the entire part. The ovary is rounded. The plant is 3-4 ft. high, flowering in July and August, and is a herbaceous perennial.

Mountain Spiderwort (*Lloydia serotina*, H. G. L. Reichb. = *L. alpina*, Salisb.).—The habitat of this plant is rocky ledges, mountain cliffs. The habit is the lily habit. The stem and leaves arise separately from the rootstock. The stem is round. The sheaths of the bulb are numerous and loose. The radical leaves are semi-cylindrical, 3-angled, bent inwards. The stem-leaves are not so long, swollen below, sheathing, short. The flowers are white, with reddish lines within, solitary. The perianth-segments are inversely ovate to oblong. The capsule is 3-sided, 3-valved above. The seeds are reddish-brown till they are ripe. The plant is 4-8 in. high, flowering in May and June, and is a herbaceous perennial.

ORDER JUNCACEÆ

Highland Rush (*Juncus trifidus*, L.).—The habitat of this rush is alpine rocks, damp, rocky mountainous places. The plant has the rush habit. It forms dense, tufted masses of rootstocks and sheaths. The stems are wiry, round, rigid, crowded, slender, erect, with one short, awl-like leaf above. The basal sheaths are awned, the upper with a short leaf. The stem-leaf may be absent, and there may be a second head in the axil. The leaves are awl-like, short, sheath-like. The leaf below the inflorescence has a tubular sheath and membranous margins. There are 1-3, pale-brown flowers, with 2 bristle-like, slender, leaf-like bracts between. The perianth-segments

are long and narrow pointed, not so long as the capsule, with pale margins. The styles and stigmas are long. The capsule is ovoid, beaked, dark-brown, the seeds large with short appendages. The plant is 6-12 in. high, flowering in July and August, and is a herbaceous perennial.

Highland Wood-Rush (*Juncoides (Luzula) spicatum*, L.).—The habitat of this plant is highland mountains, humid gravelly detritus, rocky places. The plant has the wood-rush habit. The plant is slender. The rootstock is tufted, with short stolons. The leaves are slender, shorter than the stem, small, the sheaths hairy, leathery, bent back, narrow, channelled. The stem-leaves are few and short. The flowers are in drooping, dense, oblong, lobed cymes, spike-like, the clusters not so long as the bracts. The partial bracteoles are tapered, membranous, fringed with hairs, bristle-like. The perianth-segments are narrow, long-pointed, bristle-like. The anther-stalks are half as long as the anthers. The capsule is blunt, with oblong seeds, with a white, slight, basal appendage. The plant is 4-12 in. high, flowering in June and July, and is a herbaceous perennial.

ORDER CYPERACEÆ

Rock Sedge (*Carex rupestris*, Bell).—The habitat of this sedge is cliffs, ledges of alpine rocks, lofty mountains. The plant has the sedge habit. The rootstock, which is tufted, is creeping, and bears stolons. The stems are 3-sided, rough above, wiry. The leaves are flat, channelled, curved, and end in a twisted, withered, wavy, rough, slender, triangular point, the margins bent over. The bracts are awl-like or wanting. The spikelets are narrow, dark-brown, shining. The male spikelets are at the top. The glumes of the female spikelets are few, broadly ovate, blunt, shorter than the fruit. The glumes are persistent, brown. The fruit is erect, inversely ovate, elliptic, appressed, 3-angled, with a short, abrupt beak, pale, smooth. There are 3 stigmas. The nut is inversely ovoid, 3-angled, brown. The plant is 3-6 in. high, flowering in June and July, and is a herbaceous perennial.

***Carex lagopina*, Wahl. (= *C. Lachenalii*, Schkr.).**—The habitat of this species is wet places on Scotch mountains. The plant has the sedge habit. The rootstock is tufted, the stolons short, rough above. The stem is triangular, smooth, wiry, curved below. The leaves are flat. The spike is brown, elliptic. The spikelets are elliptic, egg-shaped, 2-4, crowded, small, touching, the terminal longer. The glumes are reddish, with pale edges, oval, nearly as long as the fruit. The fruit is elliptic, erect, blunt-pointed, with an entire beak, membranous at the tip, and plano-concave, narrowed below, the nut tipped with the persistent style. The plant is 4-8 in. high, flowering in July and August, and is a herbaceous perennial.

***C. Halleri*, Gunn. (= *C. alpina*, Sw. = *C. Vahlii*, Schkuhr).**—The habitat of this species is glens and mountainous and rocky districts, wet grassy places.

The plant has the sedge habit. The rootstock has short stolons. The stems are erect, more or less solitary, rigid, 3-sided, smooth or rather rough above. The leaves are short, flat, bent-back. The spikelets are 2-4, stalkless, round or oblong, close, the lateral nearly horizontal, black. The bract is slender. The glumes are brown or black, ovate, acute or blunt, broad, crowded. The fruit is broad, inversely ovoid, yellowish-brown, without veins, rough above, larger than the glumes, with a short, rough, notched beak. The nuts are ellipsoid, inversely ovoid, 3-sided, pale, blunt, beaked. The plant is 6-15 in. high, flowering from June to August, and is a herbaceous perennial.

Blackheaded Sedge (*Carex atrata*, L.).—The habitat of this species is ledges of alpine rocks, mountains, cliffs. The habit is as in the last. The rootstock is small, tufted, and bears stolons. The stems are bent at an angle, 3-sided, hardly rough above, smooth elsewhere. The leaves are broad, large, flat, keeled. The bracts exceed the spikelets. The sheaths are short. The lower bract is leaflike. The spikelets are 3-4, nearly cylindric, ovate, oblong, close, rarely distant, shortly stalked, the uppermost mostly male, and are inclined, or drooping at length. The glumes are dark-purple, black, the midrib pale and slender, acute, erect, overlapping. The fruit is yellowish, more or less round, elliptic, 3-angled, when ripe flattened, smooth, veinless, not so long as the glumes. The beak is round, short, notched, smooth. The nut is elliptic, 3-angled, blunt, with a short point. The plant is 6-18 in. high, flowering in July and August, and is a herbaceous perennial.

Mountain Sedge (*Carex rigida*, Good. = *C. saxatilis*, L.).—The habitat of this species is wet stony places on mountains. The plant has the sedge habit. The plant is stout, with a creeping rootstock, which may be tufted. The stems are rigid, 3-angled, curved, nearly smooth, rough above. The leaves are broad, rigid, flat, keeled, curving outwards, with bent-down edges, many, broad. The sheaths are not filamentous at the edge. The bracts are sheathing below. There is one barren cylindric spike with female florets below. The spikes are short, erect. The 3-5 fertile spikelets are oval or cylindrical, close, dense, with short stalks. The fruit is elliptical, blunt, not ribbed, green, with a smooth beak. The glumes are purple, dark, with narrow, pale edges, with a green midrib. The nut is broader than long, round, blunt. The plant is 4-10 in. high, flowering in May and June, and is a herbaceous perennial.

***Carex ornithopoda*, Willd.**—The habitat of this rare sedge is calcareous cliffs. The habit is sedge-like. The stem is short, not longer than the radical leaves, which are blunt and flat. The bracts are membranous, egg-shaped, awned, shorter than the fertile spike. There are 3 fertile spikes, which are close, nearly erect, longer than the male spike. The fruit is pear-shaped, shorter than the glumes. The beak is short. The nut is elliptic, shortly stalked, nearly 3-angled. The

plant is 3-5 in. high, flowering from May to July, and is a herbaceous perennial.

Sheathed Sedge (*Carex vaginata*, Tausch).—The habitat of this species is rocky Scottish mountains. The plant has the sedge habit. The stem is smooth, curved. The leaves are bent back, radical, green, keeled. The bract is long and has a funnel-shaped sheath (hence *vaginata*), loose. The fertile spikelets are loose, distant, on erect stalks. The fruit is 3-angled, swollen, bent down, smooth, longer than the glumes, which are blunt, pale-brown, egg-shaped. The nut is elliptic, 3-sided, beaked, the beak blunt, notched, bent down. The plant is 6-15 in. high, flowering in July, and is a herbaceous perennial.

Scorched Sedge (*Carex atrofusca*, Schkr. = *C. ustulata*, Wahl.).—The habitat of this species is wet places on Scottish mountains. The plant has the sedge habit. The root is fibrous. The leaves are short and broad. The bracts are scarcely leaflike or sheathing. The fertile spikelets are 2-4, shortly stalked, egg-shaped, dense, nodding, brownish-black. The terminal spike is male. The glumes are egg-shaped, acute, dark-purple, with a slender, pale midrib. The fruit is elliptic, flattened at the border, rough-edged, with a cloven beak, dark-purple, paler below. The nut is brown, 3-angled, with a long beak, elliptic, triangular, on a long stalk. There are 3 (rarely 2) stigmas. The plant is 4-10 in. high, flowering in July and August, and is a herbaceous perennial.

Capillary Sedge (*Carex capillaris*, L.).—The habitat of this plant is the Highlands and grassy mountain banks and rocks, near sea-level, in Sutherland. The plant has the sedge habit. The root is tufted. The stems are short, smooth, 3-angled, slender. The leaves (mainly radical) are soft, flat, bent back. The bracts are large, with a long sheath, the lower including several flower-stalks. The flowers are pale yellowish-green. The fertile spikelets are loose, drooping, few-flowered, shorter than the slender (hence *capillaris*) flower-stalk. The glumes are blunt, scattered, membranous, soon falling, with brown nerves. The fruit is short-stalked, 3-angled, with a long beak, bent down. The nut is elliptic to egg-shaped, 3-sided. The plant is 4-12 in. high, flowering in June and July, and is a herbaceous perennial.

ORDER GRAMINACEÆ

Alpine Foxtail (*Alopecurus alpinus*, Sm.).—The habitat of this grass is springs and edges of alpine streams, damp grassy places, on high mountains. The plant has the grass habit. The stem is creeping, then erect, stout, smooth, narrow above. The leaves are soft, flat, the upper usually short, broad, one-third as long as the swollen sheath, the upper longer than the leaf. The ligule is blunt and short. The panicle is short, blunt, egg-shaped, oblong, loose, not more than an inch long, dense, the branches short, silky, with 4-6 spikelets. The empty glumes are egg-shaped, silky, shining, acute, the keel fringed with silky hairs. The flowering glume is blunt, hairless.

The glumes are united below, suddenly long-pointed, egg-shaped. The awn is very short or absent, not longer than the palea, or projecting one-third. The anthers are yellow, linear. The plant is 6-18 in. high, flowering in July and August, and is a herbaceous perennial.

Alpine Cat's Tail (*Phleum alpinum*, L.).—The habitat of this species is wet alpine moors, alpine springs and rills, and damp alpine pastures. The plant has the grass habit. The stem is solitary, smooth, ascending, rigid, creeping below. The upper leaf-sheaths are swollen, the lower closely pressed. The ligule is short. The panicle is egg-shaped or oblong, cylindrical, dull-purple and green. The empty glumes equal the rigid, rough awn, the keel being hairy, and are blunt, hairless, or fringed with hairs on the back. The plant is 6-18 in., flowering in July and August, and is a herbaceous perennial.

Alpine Tufted Hair Grass (*Deschampsia alpina*, Roem. and Schult. = *Aira laevigata*, Sm.).—The habitat of this grass is wet rocks, mountains. The plant has the grass habit, and is shorter than the Tufted Hair Grass. The leaves are narrow, channelled, the margins inrolled, smooth. The panicle is close, with smooth branches. The awn is inserted at the middle, and is shorter. The glumes are smooth on the midrib. The florets are often viviparous. The plant is 6-9 in. high.

Glaucus Poa (*Poa glauca*, Vahl = *P. cæsia*, Sm.).—This is a native species, occurring on mountains and alpine cliffs. The plant has the grass habit. The rootstock is somewhat creeping. The leaves are stiff, bluish-green (hence *glaucia* and *cæsia*). The upper sheath is as long as the leaf, folded and slightly bent in, tapered at the top. The ligule is blunt. The uppermost knot is near the base of the stem. The panicle is slender, erect. The spikelets are large, egg-shaped, with 2-3 acute, free flowers, the lowest flowers longer than the large glume. The lower palea is 5-veined, 3 being hairy. The plant is 6-12 in. high, flowering from July to August, and is a herbaceous perennial.

Wavy Poa (*Poa laxa*, Haenke = *P. stricta*, Sm. = *P. minor*, Bab.).—The habitat of this species is rocks on alps, lofty mountains. The plant has the grass habit. The root is fibrous. The plant is limp, smooth, pale bluish-green. The stems are flattened, prostrate below. The leaves are short, linear, obliquely blunt-pointed, the upper longer than the sheath, folded, bent inward, tapered at the point. The ligules are long, torn, acute. The upper sheath is longer than the leaf. The uppermost node is covered. The panicle is oblong, more or less ovate, loose, more or less one-sided, slightly drooping, the branches solitary or divided into two, smooth, rarely rough. The spikelets are viviparous, green or purple, of 3-4 webbed florets. The flowering glumes are 2-4, with hairy keel and margins, the nerves (3-5) not prominent. The empty glumes are long-pointed with membranous tips. The plant is 4-9 in. high, flowering in July and August, and is a herbaceous perennial.

Alpine Poa (*Poa alpina*, L.)—The habitat of this species is rocks, lofty mountains. The plant has the grass habit. It is smooth. The stout rootstock is tufted and creeping. The stems are stout, smooth, round in section, covered with the sheaths of last year. The leaves are broad, firm, the tip rounded, folded, short, stiff, rigid, keeled, shortly blunt-pointed, the edges thick and rough, the upper shorter than the sheath. The persistent lower sheaths are white, broad, membranous, leafless, the upper smooth, flattened. The long ligule is pointed, torn, acute. The uppermost node is exposed. The panicle is loose, pyramidal, oblong, erect, spreading in flower, the branches 2-nate. The spikelets are green and purplish, 4–5 flowered, ovate, often viviparous. The flowering glumes are 3–9, with a downy keel and margin, with 3–5 obscure veins. The tips are membranous, webbed, broad. The plant is 4–12 in. high, flowering in July and August, and is a herbaceous perennial.

Poa Balfouri, Parn.—This grass is found on hills in the north of England and Scotland. The habit is creeping. The upper sheath is equal to the leaf in length. The ligule is large, blunt. The panicle is erect, spreading. The plant is 9–18 in. in height. It flowers in July and August, and is a herbaceous perennial.

Hard Fescue (*Festuca rigida*, Kunth = *Schlechtloa rigida*, Link).—The habitat of this species is dry rocks, walls, dry calcareous places. The plant has the grass habit. The plant is often

purplish in colour, smooth. The root is fibrous. The stems are slender, wiry, erect. The leaves are nearly flat or have the margin inrolled, and are more or less bristle-like. The sheaths are round and grooved. The ligule is oblong. The panicle is lance-shaped, nearly simple, rigid, compact, the branches distichous. The spikelets are 3–5, more or less stalkless, linear, with a narrow point. The rachis is broadly channelled, rough at the edge. The upper glumes reach as far as the third floret. The flowering glumes are smooth, shining, round, 7–10, acute, with faint nerves. The flower-stalks are short, stout, half-round in section. The plant is 3–6 in., flowering in June and July, and is a herbaceous annual.

Agropyron donianum, F. B. White = *A. alpinum*, Don = *T. biflorum*, Brigh. Mitt.—The habitat of this species is mountain cliffs. The plant is erect, and the leaves are thin and flat, with many slender ribs. The panicle is close. The spikelets are 2–6-flowered. The glumes have a short awn, and are strongly 4–6-ribbed, the awn, ribs, edges, and tips rough. The lower palea is narrowed abruptly, and has membranous margins at the tips, 4–6-ribbed, with an awn quarter to half its length. The upper palea is blunt-pointed, densely fringed with hairs on the lateral keels, densely rough with a prominent midrib towards the tip, the lateral ribs toothed at the tip, which fall short of the apex. The axis is hairy, the rachis fringed with hairs. The plant is 1–2 ft. high, flowering in July and August, and is a herbaceous perennial.

APPENDIX

ADDENDA

The following plants should have been included in the text of Vol. VI under the divisions in which they are here placed. Some have but recently been found to be British; a few have only lately been raised to specific rank from the status of varieties (not included in this work).

FIELDS AND MEADOWS

ORDER LEGUMINOSÆ

Black Medick (*Medicago lupulina*, L.).—Stems prostrate, then ascending, much branched. Leaf trifoliate, shortly stalked, round-ovate, apiculate. Stipules semi-cordate, toothed. Flowers many, small, yellow, in dense oval heads. Flower-stalks longer than leaf-stalks. Pods 1-seeded, veined, kidney-shaped, black, flattened. Plant 6 in. to 1 ft. May–August. Herbaceous annual or biennial. Fields and waste places; much cultivated as a fodder crop.

Trifolium Molinerii, Balb.—Differs from *T. incarnatum*, of which it may be the wild form, as follows:—Stem erect, with appressed hairs. Flowers terminal, in conical heads, rose or nearly white. Tips of calyx-teeth smooth. 6–12 in. May. Herbaceous annual. Cornish coast.

ORDER UMBELLIFERÆ

Oenanthe silaifolia, Bieb.—Root tuberous, spindle-shaped. Stem branched. Radical leaves 2-, caudine 1-pinnate. Leaflets linear, acute. Involucle 0. Involucel-bracts shorter than the flowers, with a few long rays. Outer florets stalked, barren. Calyx unequal. Fruit cylindrical, narrowed below, without a coryc base in middle of umbel. Style erect, short, rigid. 1–3 ft. June. Herbaceous perennial.

ORDER IRIDACEÆ

Crocus biflorus, Mill.—Leaves and flowers simultaneous. Corm with membranous sheath. Scape naked. Flowers lilac, with purple and yellow stripes. Spathe double. Stigmas erect, longer than stamens; lobes blunt, notched. 4–6 in. March.

Golden Crocus (*Crocus vernus*, Mill.)—Leaves and flowers vernal. Corm with fibrous covering. Scape naked. Flowers golden-yellow. Spathe simple. Stigmas shorter than stamens; lobes at most slightly notched. 4–6 in. March.

Autumn Crocus (*Crocus nudiflorus*, Sm.)—Corm round, covered with brown parallel fibres. Scape enclosed in a tubular sheath. Flowers solitary, violet. Stigmas longer than stamens, laciniate. Anthers orange. Seeds red. 3–6 in. August–October.

ORDER GRAMINACÆ

Tall Fescue (*Festuca arundinacea*, Schreb.). Stems tufted. Leaves flat, firm, linear-lanceolate. Sheaths rough; ligule smooth. Drooping, spreading panicles. Glumes acute. Awn short. Fruit free within the flowering glume. 3–6 feet. July.

Red Fescue (*Festuca rubra*, L.).—Differs from *F. ovina* as follows:—Taller, loosely tufted, stoloniferous. Cauline leaves bristle-like or inrolled, blunt. Lower sheaths hairy. Panicle broad below, more or less 1-sided. Spikelets pale-red, 4–10-flowered. Awn short. 1–3 ft. June.

CORNFIELDS, ETC.

ORDER RANUNCULACEÆ

Pheasant's Eye (*Adonis annua*, L.)—Erect. Stem branched, very leafy. Leaves 3- (or more) pinnatifid. Segments linear. Flowers scarlet, with black eye. Petals 5–10, broad, cup-shaped, notched, scarcely longer than sepals. Calyx greenish, smooth, spreading. Carpels in a long oval head, without teeth. 6–12 in. May–September. Herbaceous annual.

ORDER PAPAVERACEÆ

Pale-red Poppy (*Papaver dubium*, L.)—Erect. Stem branched, with appressed hairs. Leaves divided nearly to the base; lobes blunt, broad, entire. Flowers large, pale-red; pairs of petals unequal. Filaments thread-like. Capsule sessile, club-shaped, smooth. Edge of stigmatic disk obscurely 6–12-lobed. 1–2 ft. May–July. Herbaceous annual.

Rough-headed Poppy (*Papaver Argemone*, L.)—Stem erect, leafy. Leaves 2-pinnatifid. Flowers small, pale-red, with black eye. Petals narrow, soon falling. Filaments swollen above. Capsule

BRITISH FLORA

club-shaped, roughly hairy. Stigma convex, 4-6 rayed. 6-18 in. May-July. Herbaceous annual.

Rough-headed Poppy (*Papaver hybridum*, L.).—Erect. Stem with few branches. Leaves pinnatifid; lobes acute or awned. Flowers crimson or purplish, with dark eye. Filaments swollen above. Capsule rounded, roughly hairy. Stigma convex, 4-8 rayed. 6-15 in. June-August. Herbaceous annual.

ORDER FUMARIACEÆ

Fine-leaved Fumitory (*Fumaria parviflora*, Lam.).—Stem erect or spreading. Leaves greyish or bluish-green. Segments narrow, channelled. Flowers whitish or purple. Raceme dense. Sepals small, triangular-ovate, linear, acute. Flower-stalks equal to bracts, shorter than fruit. Fruit obovate, small-warted. 6-10 in. June-September.

ORDER COMPOSITÆ

Scentless Mayweed (*Matricaria inodora*, L.).—Erect or spreading. Stems branched, angular, smooth, without barren shoots. Leaves sessile, pinnatifid. Segments capillary, pointed. Flower-heads terminal, solitary. Involucral bracts lanceolate, blunt, with a brown border. Ray white; disk yellow. Receptacle ovate, then conical. Fruit rough, with two glands on the outer side below the entire raised border. Scent faint or nil. 1-1½ ft. June-October. Herbaceous annual.

ORDER CONVOLVULACEÆ

Clover Dodder (*Cuscuta Trifoliae*, Bab.).—On Clover. Differs from Heath Dodder chiefly in having yellowish-white flowers and yellow apiculate anthers. 1-3 ft. August.

ORDER OROBANCHACEÆ

Orobanche ramosa, L.—On Hemp. Stem branched. Calyx-tubular; calyx-teeth 4, triangular-ovate, pointed. Corolla ½-in., blue. Anthers smooth. 4-8 in. Annual. Rare.

Great Broom-Rape (*Orobanche reticulata*, Wall.).—On Thistles. Sepals simple, hairy only at the base. Corolla white or yellowish. Filaments glandular, hairy above. 1-3 ft. July. Perennial. Yorkshire. Very rare.

ORDER ILLECEBRACEÆ

Annual Knawel (*Scleranthus annuus*, L.).—Stems much branched, dichotomous, slender. Leaves bent back, often white below. Flowers green, solitary below, forming a dense corymb above. Calyx-lobes acute, with narrow membranous border; spreading and 10-nerved in fruit. 2-8 in. June-September. Herbaceous annual or biennial.

ORDER GRAMINACEÆ

Rye Grass (*Loium multiflorum*, Lam.).—No barren shoots, and not tufted (difference from *L. italicum*). Paler than *L. perenne*. Ligule short, abrupt. 9-14 flowers in each spikelet. Lower palea with long awn. 1-2 ft. June. Annual. Cultivated.

SEA-COASTS

ORDER CRUCIFERÆ

English Scurvy Grass (*Cochlearia anglica*, L.).

—Differs from Common Scurvy Grass as follows:—Much larger. Radical leaves not cordate. Stem-leaves half-clasping. Pod oblong, obovoid, deeply furrowed. Style slender. 10-18 in. May. Herbaceous annual.

ORDER CARYOPHYLLACEÆ

Pink (*Dianthus gallicus*, Pers.).—Like the Cheddar Pink in habit and size. Lower part of stem with small papillate hairs. Leaves with fine marginal teeth. Calyx longer, cylindrical. Flowers dark-rose. Petals with long, irregular, sub-linear, blunt lobes. Sand-dunes, Jersey. July-September. Herbaceous perennial.

ORDER LEGUMINOSÆ

Yellow Vetch (*Vicia lutea*, L.).—Sufficiently characterized by the solitary or paired sessile pale-yellow flowers. Calyx-teeth unequal, upper shorter, lower longer than the calyx-tube. Pod turned back, with bulbous hairs. 6-18 in. June-August. Herbaceous annual.

ORDER CRASSULACEÆ

Sedum Drucei, Græbner.—The common British form, previously included in *Sedum acre*, L. The genuine *S. acre* is stouter, more erect, and tufted, with thicker leaves; according to Ostenfelde, it is found in Stirlingshire. *S. Drucei* is common on shores, also inland on rocks, walls, and dry sandy soil.

ORDER CHENOPODIACEÆ

Shrubby Orache (*Atriplex Halimus*, L.).—Recently established on the south coast. Branches white. Leaves rhomboidal, silvery. Otherwise like *A. hortensis*. 2-6 ft. July - September. Perennial evergreen shrub.

ORDER POLYGONACEÆ

Rumex rupestris, Le Gall.—Radical-leaves oblong. Stem-leaves strap-shaped, rounded, and narrowed at both ends. Bracts few, narrow. Panicle tapering; whorls rather close. Sepals large, with nearly parallel sides, narrow, ovate-oblong, blunt, entire. A very large tubercle on each perianth-lobe. Nuts ovate, acute. 1-3 ft. June-September. Herbaceous perennial. Southwest coast. Rare.

ORDER GRAMINACEÆ

Kæleria albescens, DC.—Differs mainly from *K. gracilis*, Pers., in having the leaves rolled lengthwise. 6-18 in. June. Herbaceous perennial. Dorset and Channel Islands. Very rare.

WOODS AND COPSES

ORDER FUMARIACEÆ

Capnoïdes bulbosa, DC.—Erect. Rootstock tuberous, solid. Stem stout, simple. Leaves

2-3-ternate. Bracts lobed, leafy. Flowers purple in a terminal raceme. Spur long. Style persistent. 6-10 in. April. Herbaceous perennial.

Purple Fumitory (*Capnoidea tuberosa*, DC.)—Differs from last mainly in the hollow tuber and the entire bracts.

ORDER GERANIACEÆ

Geranium nodosum, L.—Erect. Stem smooth, slender. Leaves 3-5-lobed; lobes ovate, with long narrow point, toothed. Flowers paired, pale rose-purple. Sepals awned. Carpels downy. Petals obcordate, long. 1-2 ft. July. Plantations. Rare.

ORDER LEGUMINOSÆ

Coronilla varia, L.—Prostrate-ascending. Stem branched. Leaflets ovate-oblong, with blunt point. Flowers umbellate, on long stalks, purple or white. 1-3 ft. July. Herbaceous perennial. Rare.

Black Bitter Vetch (*Lathyrus niger*, L.)—Chief differences from *L. macrorrhizus*:—Stem angled. Leaflets 3-6 pairs. Stipules very narrow. Calyx-teeth very short. Flowers livid-purple, turning blue. Pods narrow, inflated, more or less septate, rough, blunt-pointed at both ends. Seeds flattened, bluntly-angled. 1-2 ft. June. Herbaceous perennial. Scotland, rocky sub-alpine valleys. Rare.

ORDER ROSACEÆ

Cherry Laurel (*Prunus Laurocerasus*, L.)—Leaves almond-scented when bruised, evergreen, shiny above. Flowers white. 4-9 ft. May. Evergreen shrub. Plantations.

Fragrant Agrimony (*Agrimonia odorata*, Mill.)—Differs from *A. Eupatoria* as follows:—More branched, racemes denser. Flowers and fruits larger. Calyx bell-shaped, with few or no furrows. 1½-2 ft. June. Herbaceous perennial. Rare.

Agrimonia agrimonoides, L.—Radical-leaves ternate, with large oval lobes. Stem leafy, interrupted, branched. Flowers yellow, enclosed in a leafy involucre. 9-15 in. July. Herbaceous perennial. Very rare.

ORDER SAXIFRAGACEÆ

Opposite-leaved Golden Saxifrage (*Chrysosplenium oppositifolium*, L.)—Differs from *C. alternifolium*, L., as follows:—Stem more leafy, branched, creeping, rooting below. Leaves opposite, round, narrowed suddenly into short broad stalk. 2-4 in. May-July. Herbaceous perennial.

ORDER VALERIANACEÆ

Pyrenean Valerian (*Valeriana pyrenaica*, L.)—Erect. Stem tall, furrowed. Leaves very large, cordate, coarsely toothed, upper with a few basal leaflets. Flowers as in *V. officinalis*, L. 2-4 ft. June. Herbaceous perennial.

ORDER COMPOSITÆ

Great Burdock (*Arctium Lappa*, L. = *A. majus*, Schkuhr).—Differs from *A. minus*, Schkuhr, as

follows:—Radical leaves very large. Leaf-stalks solid. Flower-heads in a loose corymb, large, on long stalks. Involucral bracts spreading. 3-4 ft. July. Herbaceous perennial.

Arctium vulgare, Evans (= *A. intermedium*).—Involucral bracts spreading. Otherwise like *A. minus*. 2-4 ft.

ORDER BORAGINACEÆ

Omphalodes verna, Mönch.—Creeping, stoloniferous. Radical-leaves cordate-ovate; caudine ovate-lanceolate. Flowers racemed, few, large, bright-blue. May. Herbaceous biennial.

ORDER SCROPHULARIACEÆ

Scrophularia alata, Gibb. (= *S. umbrosa*, Dum.).—Differs from *S. nodosa*, L., as follows:—Stem broadly winged, bracts leafy. Capsules rounded. 2-4 ft. July-September. Herbaceous perennial.

ORDER AMENTACEÆ

Sessile Oak (*Quercus sessilifolia* = *Q. sessiliflora*, Salisb.).—Differs from *Q. pedunculata*, Ehrh., as follows:—Often stunted. Leaves hairy, with two auricles at base; petioles short. Acorns smaller, rounder, closer together, on very short stalks. 60-100 ft. April. Deciduous tree. Characteristic of siliceous soils.

ORDER LILIACEÆ

Star of Bethlehem (*Ornithogalum umbellatum*, L.)—Bulb with several bulbils. Leaves green, with a white stripe. Flowers in a corymb. Flower-stalks slender, erect. Perianth-segments linear. Filaments awl-shaped. Capsule obovoid. 6-8 in. May. Bulbous perennial.

ORDER JUNCACEÆ

Wood Rush (*Juncus sylvaticus*, Reich. = *J. acutiforus*, Ehrh.).—Tall, stems jointed internally. Leaves flattened, jointed. Flowers 5-6, in dense clusters. Perianth-segments dark-chestnut, long-pointed, as long as the capsule. Capsule pale brown, 3-angled, ovate, beaked. 1-3 ft. July. Herbaceous perennial.

White Wood-rush (*Luzula nemorosa*, E. Mey. = *L. albida*, DC. = *Juncoides nemorosum*, O. Kuntze).—Cyme doubly compound, flowers in clusters of 2-4, whitish or pinkish. Bracts nearly as long as cyme. Anthers hardly stalked. June. Herbaceous perennial.

ROADSIDES AND HEDGES

ORDER CARYOPHYLLACEÆ

Chickweed (*Stellaria umbrosa*, Opitz. = *S. Elizabethæ*, Schultz).—Differs from *S. media*, L., as follows:—Stem erect or ascending. Ultimate flower-stalks twice as long as calyx, smooth; when in fruit, turned down below, straight above, at length erect. Sepals smooth, with raised points. Seeds with acute tubercles.

ORDER GERANIACEÆ

Round-leaved Crane's-bill (*Geranium rotundifolium*, L. = *G. viscidum*, Ehrh.).—Erect or spreading, loosely hairy. Leaves as in *G. molle*, L. Sepals with short awn. Petals longer than sepals, entire, narrow, spoon-shaped, pale-pink; claw smooth. Carpels keeled, not wrinkled. Seeds dotted. 6–12 in. June. Herbaceous annual.

ORDER RHAMNACEÆ

Buckthorn (*Rhamnus catharticus*, L.).—Much branched. Branches opposite, ending in thorns. Bark black. Leaves ovate, coarsely toothed, clustered at ends of shoots, opposite lower down, with spreading veins. Dioecious. Parts of flower in fours. Flowers yellow-green, solitary, or clustered in axils of leaf-clusters. Ultimate flower-stalks very short. Calyx of male flowers bell-shaped; of female, cup-shaped, with acute lobes. Style 4-cleft. Fruit a round, black drupe, with 4 stones; latter grooved on back. 5–10 ft. May–July. Deciduous shrub.

ORDER ROSACEÆ

Dog Rose (*Rosa sarmentacea*, Woods = *R. dumalis*, Bechst.).—Leaflets smooth, doubly toothed, margin glandular. Flower-stalks naked. Flowers pink. Sepals fall before fruit is ripe. Styles free. 3–8 ft. June. Deciduous shrub.

Rosa tomentella Lem. (= *R. obtusifolia*, Desv.).—Leaflets small, very downy below, with many scentless glands. Sepals turned back, falling at length. 3–6 ft. June. Deciduous shrub.

Rosa scabrrata, Crêp.—Like *R. sarmentacea*, Woods, but secondary nerves of leaflets more or less glandular. 3–6 ft. June.

Rosa Rothschildii, Druce (= *R. caryophyllacea*, Auct.).—Leaflets scented, doubly-toothed, hairy on midrib and veins below, margin glandular. Leaf-stalks and flower-stalks glandular and aciculate. Prickles sickle-like. Flowers pale-rose. Style more or less smooth. Fruit ovate, smooth. Northants, Hunts, and Surrey.

ORDER UMBELLIFERÆ

Wild Parsnip (*Pastinaca sativa*, L. = *Peucedanum sativum*, B. & H.).—Erect. Stem stout, angled, furrowed, hollow. Leaves pinnate, shining above, downy below; leaflets 2–5 pairs, ovate, cut, coarsely toothed. Flowers small, yellow. No involure. Fruit broadly oblong. Styles very short. 2–3 ft. July. Herbaceous biennial.

ORDER LABIATÆ

Hedge Woundwort (*Stachys sylvatica*, L.).—Ascending. Rootstock stoloniferous. Stem solid, rather slender. Leaves stalked. Radical soon withering. Cauline ovate, cordate, coarsely toothed. Flowers purplish-red, in whorls of 6–12 flowers. Lower bracts toothed, upper lanceolate, entire. Bracteoles very small. Calyx-teeth triangular, awl-shaped, spinose. Corolla-tube longer than calyx. Lower lip with white markings. Anther-cells spreading. 1–3 ft. July. Herbaceous perennial.

ORDER ULMACEÆ

Ulmus glabra, Mill. (= *U. nitens*, Mœnch).—Habit of Wych Elm. Leaves smooth, shining above, with hairs only in the axils of the veins below. Root sends up suckers. Leaf-stalks smooth when full-grown. 60–120 ft. April. Deciduous tree.

Huntingdon Elm (*Ulmus vegeta* = *U. scabra* [*montana*] × *U. glabra*, Mill.).—Lower branches ascending. Twigs nearly smooth. Leaves large, stalked, smooth, and shining above, acute, long-pointed. Root with suckers.

Dutch Elm (*Ulmus hollandica*, Mill. = *Ulmus glabra*, Mill. × *U. scabra*).—Lower branches horizontal. Terminal leaves acute, minutely downy. Branches often very corky. Root with suckers.

Northamptonshire Elm (*Ulmus Plotii*, Druce = *U. minor*, Henry = *U. sativa*, Moss non Mill.).—Lower branches pendulous, somewhat one-sided. Bark smooth. Leaves ovate-lanceolate, long-pointed, bluntly toothed. Upper leaves smooth, shining. Young branches nearly smooth. 50–110 ft.

ORDER SALICACEÆ

Grey Poplar (*Populus canescens*, Sm.).—Leaves roundish, cordate, hoary or smooth below. Leaves on the suckers angled and toothed. Stigma downy. 30–90 ft. March. Deciduous tree.

Canadian Black Poplar (*Populus serotina*, Hort. = *P. monilifera*, Ait.).—Leaves broadly triangular, greyish-green. Trunk smooth, branches ascending. Leaf-buds sticky. Catkins loose. Female flowers rare in this country. Tree has a peculiar list, often to the east. 60–90 ft. April. Deciduous tree.

Populus deltoides, Marsh.—Differs from last as follows:—Crown more regular. Female flowers frequent. Leaves broadly triangular, with heart-shaped base. Margin broadly scalloped, glandular. 60–90 ft. March.

MOUNTAINS, HILLS, AND DRY PLACES

ORDER COMPOSITÆ

Taraxacum spectabile, Dahlst. —Differs from *T. paludosum* in the large, coarsely cut, 4–7-lobed leaves. Grass-green, shining, blotched with dark-crimson. North England, Wales, Scotland, Ireland.

ORDER LABIATÆ

Ground-Pine (*Ajuga Chamœpitys*, Schreb.).—Erect. Stems reddish-purple, branched, leafy. Hairs scattered. Radical-leaves withering early, stalked, ovate-lanceolate. Stem-leaves 3–ñd, segments linear, entire. Bracts similar, much longer than flowers. Flowers yellow, in many whorls of 2 each. Calyx roughly hairy, teeth narrow, triangular. Lower lip of corolla red-spotted. Nutlets large, oblong, deeply pitted. 3–6 in. May–September. Herbaceous annual. Chiefly on chalk.

APPENDIX

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ORDER GRAMINACEÆ

Milium vernale, Bieb.—Differs from *M. effusum*, L., as follows:—Panicle close. Palea blunt. Stem rough. Leaves short, linear-lanceolate, 1–4 in. April. Herbaceous annual. Guernsey.

Kæleria vallesiana, Asch. & Græbn.—Erect Rootstock covered with dense mat of persistent fibres of leaf-sheaths. Leaves short, turned back, turned over at margins, stiff, bluish-white. 6–15 in. June. Herbaceous perennial.

LAKES, RIVERS, ETC.

ORDER RANUNCULACEÆ

Water Buttercup (*Ranunculus peltatus*, Schrank).—Floating leaves divided half-way into 3 wedge-shaped segments. Submerged leaves thread-like, generally stiff. Flowers large. May–September. Herbaceous perennial.

ORDER GERANIACEÆ

Orange Edsal (*Impatiens biflora*, Walt. = *I. fulva*, Nutt.).—Differs from *I. Noli-me-tangere*, L., as follows:—Leaves acute. Flowers orange. Posterior sepal suddenly contracted into a turned-back, notched spur. 1–3 ft. July–October. Herbaceous annual. American; naturalized.

ORDER UMBELLIFERÆ

River Water Dropwort (*Oenanthe fluviatilis*, Colem.).—Floating. Segments of submerged leaves parallel. Fruit as long as styles. [In *O. Phellandrium*, Lamk., a plant of still waters, leaf-segments are spreading and fruit twice as long as styles.] July–September. Herbaceous perennial.

ORDER SCROPHULARIACEÆ

Musk (*Mimulus moschatus*, Dougl.).—Ascending. Glandular, hairy, musk-scented. Leaves elliptical, small. Flowers narrow, yellow. 6–18 in. July. Herbaceous perennial. Naturalized.

Water Speedwell (*Veronica Anagallis-aquatica*, L.).—Inflorescence long, dense-flowered. Flower-stalks ascending. Flowers generally pale-blue. Fruit ovate-obcordate, narrow below, with narrow notch at tip. 1–2 ft. July. Herbaceous perennial.

Veronica aquatica, Bernh.—Differs from last as follows:—Inflorescence loose. Flower-stalks horizontal. Flowers white or pale-pink. Fruit broad, not narrowed below, deeply notched.

ORDER LABIATÆ

Mentha pubescens, Willd.—Differs from *M. aquatica*, L., as follows:—Leaves dull-green and hairy above, densely woolly below. Flowers in a dense, cylindrical spike, interrupted below. Calyx-teeth two-thirds the length of the tube, awl-shaped. August–October. Herbaceous perennial. Probably a hybrid.

Marsh Woundwort (*Stachys palustris*, L.).—Differs from *S. sylvatica*, L., as follows:—Stem shorter, hollow. Leaves much narrower, with

short (or no) stalks. Hairs less coarse. Odour less disagreeable. Flowers paler. A hybrid with *S. sylvatica*, L. (*S. ambigua*, Sm.) occurs.

ORDER POLYGONACEÆ

Tear-Thumb (*Polygonum sagittatum*, L.).—Stem rough, with turned-back prickles. Leaves oblong-ovate to arrow-shaped. Flowers white. 6 in.–2 ft. July–October. Herbaceous annual. North American, naturalized in County Kerry.

ORDER ALISMACEÆ

Canadian Arrowhead (*Sagittaria heterophylla*, Pursh).—Leaves ovate-lanceolate. Flowers white, without purple markings. 6 in.–2 ft. June. Herbaceous perennial. Canadian. River Exe (W. P. Hiern).

ORDER NAIADACEÆ

Loddon Pondweed (*Potamogeton Drucei*, Fryer).—Floating leaves 4–6 in., leathery, blade gradually merging into the stalk, elliptic-lanceolate, with net-like veins. Submerged leaves long, clear-green. Fruit broadly obovate; keel acute, tubercled in acute angles below. June. Herbaceous perennial. River Loddon.

Potamogeton varians, Fryer (= *P. spathiformis*, Tuck.).—Leaves inversely ovate, lower spoon-shaped, mostly sessile. June–August. Herbaceous perennial. Streams. Very rare.

WASTE PLACES, ETC.

ORDER PAPAVERACEÆ

Opium Poppy (*Papaver somniferum*, L.).—Distinguished from other native poppies by the glaucous stem-clasping leaves and the large white or dull-purple flowers. 1–3 ft. July. Herbaceous annual.

Scarlet Horned Poppy (*Glaucium corniculatum*, Curt. = *G. phaniceum*, Crantz).—Smaller than *G. luteum*, L. Flowers scarlet or wine-red, with a black spot below. Capsule hairy. July. Herbaceous biennial.

ORDER FUMARIACEÆ

Fumitory (*Fumaria capreolata*, L.).—Climbing by twisted petioles. Leaves 2-pinnate; segments broad, flat. Sepals half as long as corolla. Lower petal gradually dilated at tip. Fruit square, blunt, with a distinct neck. Fruit-stalks turned back. 1–3 ft. May–September. Herbaceous annual.

Fumaria purpurea, Pugsley.—Differs from last as follows:—Sepals two-thirds as long as corolla. Corolla purplish, tipped with dark-purple. Flower-stalks spreading at first. Fruit smaller, slightly wrinkled when dry.

Fumaria occidentalis, Pugsley.—Robust, climbing. Flowers large, rose with dark-purple tips. Upper petals broadly winged. Fruit-stalks erect or curving downwards. Fruit large, roundish, tubercled, wrinkled when dry. June–October. Herbaceous annual. Cornwall.

Fumaria Boræi, Jord.—Robust. Flowers large, purple or pink. Fruit broader than long, blunt, wrinkled, with very narrow neck. May—September. Herbaceous annual.

Fumaria Bastardii, Bor. (= *F. confusa*, Jord.).—Climbing. Flowers large, whitish or pink, inner petals tipped with dark-purple. Sepals not half as long as corolla, often persisting. Fruit rounded above the very broad neck, wrinkled vertically. Apical pits broad and shallow. April—September. Herbaceous annual.

Fumaria densiflora, DC. (= *F. micrantha*, Lag.).—Spreading. Leaf-segments narrow, flat or slightly channelled. Flowers pale-purple. Lower petal spoon-shaped. Sepals broader than corolla tube, toothed. Fruit-stalks erect to spreading. Fruit rounded or longer than broad, wrinkled when dry, with two shallow apical pits. 6 in.—2 ft. June—September. Herbaceous annual.

Fumaria Vailantii, Lois.—Greyish-green. Leaf-segments flat, spreading, narrow. Sepals very small, triangular. Flowers purplish, then white. Fruit obovate, pointed, shorter than fruit-stalk. April—September. Herbaceous annual. Rare.

ORDER CRUCIFERÆ

Alyssum incanum, L.—Erect or ascending. Stem hoary. Leaves lanceolate. Flowers white. Calyx falls. Petals 2-fid, nearly to base. Pods elliptic, many-seeded. 6–15 in. June—September. Herbaceous annual or biennial.

Flixweed (*Sisymbrium Sophia*, L.)—Erect. Stem branched above. Leaves 2–3-pinnatifid; segments linear-lanceolate. Flowers pale-yellow on slender stalks; petals short. Pods linear, round in section, three times as long as stalks, erect to spreading. Style very short. Seeds oblong. 1–2 ft. June—August. Herbaceous annual.

Sisymbrium pannonicum, L. (= *S. altissimum*, L. = *S. Sinapistrum*, Crantz).—Erect. Lower leaves runcinate-pinnatifid, auricled below. Flowers yellow. Sepals spreading. Pods spreading. 1–2 ft. June—August. Herbaceous annual.

London Rocket (*Sisymbrium Irio*, L.).—Erect. Stem branched, smooth. Lower leaves runcinate-pinnatifid; lobes toothed oblong, terminal, angular. Upper lanceolate with hastate terminal lobe. Flowers yellow. Flower-stalks slender. Pods round in section, erect, four times as long as the stalks. Seeds oblong. 1–2 ft. June—August. Herbaceous annual.

Treacle Mustard (*Erysimum cheiranthoides*, L.).—Erect. Stem rigid. Leaves lanceolate, narrowed at base, entire, slightly toothed, with 3-partite stellate hairs. Flowers yellow. Flower-stalks exceeding calyx, much shorter than pods. Pods more or less erect. Seeds many, small. 6 in.—2 ft. June—August. Herbaceous annual.

Erysimum repandum, L.—Spreading. Leaves lanceolate, repand-toothed. Hairs simple. Flowers pale-yellow. Pods square, blunt, spreading. 6 in.—1 ft. June—August. Herbaceous perennial.

Hare's Ear Treacle Mustard (*Conringia orientalis*, L. = *Erysimum perfoliatum*, Crantz).—Erect. Stem simple, round in section. Radical-leaves obovate, blunt, entire, smooth, glaucous. Cauline ovate-cordate, blunt, clasping. Flowers cream-coloured. 1–2 ft. June—September. Herbaceous annual.

Wild Turnip (*Brassica Rapa*, L.)—Radical-leaves more or less hairy, not glaucous. Cauline smooth, bluish-white. Flowers bright-yellow. 1–3 ft. May—July. Herbaceous biennial.

Swede (*Brassica Rutabaga*, DC.).—Radical-leaves glaucous. Root tuberous, with elongated neck. Flowers pale-buff. 1–3 ft. March—September. Herbaceous biennial.

Rape (*Brassica Napus*, L.)—Leaves bluish-white. Root slender, spindle-shaped. Flowers yellow. 1–3 ft. June—August. Herbaceous biennial.

Black Mustard (*Brassica nigra*, Koch = *B. sinapoides*, Roth).—Erect. Lower leaves large, lyrate, rough; terminal lobe large-lobed. Upper linear-lanceolate, entire, smooth. Pods appressed, square, smooth, beak awl-shaped, short, sterile; valves 1-veined. 1–4 ft. June—August. Herbaceous annual.

White Mustard (*Brassica alba* Boiss. = *Sinapis alba*, L.).—Chief differences from last:—Stem rough, with turned-back hairs. Pods spreading, cylindrical, knotty, roughly hairy. Valves 5-veined, not as long as sword-shaped beak, which is sometimes 1-seeded. 1–3 ft. June—August. Herbaceous annual.

Brassica Pollichii, Druce.—Leaves deeply pinnatifid. Flowers whitish-yellow, with bracts at base of raceme. Pods spreading, linear, 1-nerved. 1–2 ft. June—August. Herbaceous annual.

Hairy Cress (*Lepidium Draba*, L.)—Erect. Stem branched. Leaves oblong, clasping, toothed, lower stalked. Flowers numerous, small, white, on long stalks in corymbs. Style as long as disseminate. Pod heart-shaped. 1–2 ft. May. Herbaceous perennial.

Garden Cress (*Lepidium sativum*, L.)—Erect. Lower leaves 1–2-pinnatifid; upper linear, entire, sessile. Flowers white. Pouch round-oval, blunt. 6–18 in. June—August. Herbaceous annual.

Smith's Cress (*Lepidium Smithii*, Hook. = *L. heterophyllum*, Benth.).—Stems several, branched below, central one erect, rest spreading. Leaves hairy, toothed; lower orbicular, stalked; upper lanceolate, clasping. Flowers white. Anthers violet. Pods ovate, notched. Style twice as long as notch. 6–12 in. June—August. Herbaceous perennial.

ORDER VIOLACEÆ

Heart's Ease (*Viola tricolor*, L.)—Differences from *V. arvensis*, L.:—No rootstock. Leaves oblong, scalloped. Flowers purple and yellow. Petals longer than sepals. 4–12 in. April—September. Herbaceous annual.

ORDER CARYOPHYLLACEÆ

Soapwort (*Saponaria Vaccaria*, L.)—Glaucous. Erect. Stem much branched above. Leaves

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ovate-oblong, sessile, clasping. Flowers rose-coloured. Calyx 5-angled. 9 in.-2 ft. July-September. Herbaceous annual.

Silene dichotoma, Ehrh.—Erect. Stem forked above. Flowers creamy-white. 1-2 ft. June. Herbaceous annual. Resembling some forms of *Lychnis alba*, but more slender.

ORDER PORTULACEÆ

Portulaca oleracea, L.—Prostrate-ascending, smooth, fleshy. Stem branched. Leaves alternate. Flowers yellow, terminal, sessile. 6-18 in. June-August. Herbaceous annual.

ORDER LEGUMINOSÆ

Vicia tenuifolia, Roth.—Climbing. Leaflets linear, acute. Tendrils branched. Flowers blue with white markings, in a long spike. Limb of standard long. Pods linear-oblong. 2-4 ft. June. Herbaceous annual.

Villous Vetch (*Vicia villosa*, Roth).—Prostrate-ascending. Leaflets lanceolate, with spreading villous hairs. Flowers purple. Limb of standard long. Pod rhomboid-elliptical. 1-3 ft. June-August. Herbaceous annual.

Hairy Yellow Vetch (*Vicia hybrida*, L.).—Prostrate. Stems not tufted. Leaflets oval. Flowers yellow. Standard and podhairy. 6 in.-2 ft. June-August. Herbaceous perennial.

ORDER ROSACEÆ

Garden Strawberry (*Fragaria chiloensis*, Duch.).—Creeping. Leaves dark-green above, white below. Flowers white, 1-1½ in. Fruiting calyx erect. 6-10 in. May-July. Herbaceous perennial.

ORDER UMBELLIFERÆ

Falcaria vulgaris, Bernh.—Leaves ternate, digitate, leaflets linear-lanceolate, coarsely serrate, blunt-pointed. Flowers white. 1-2 ft. July. Herbaceous perennial.

Chærophylloides aureum, L.—Rootstock branched. Leaflets yellowish-green, smooth, long-pointed. Flowers white. Fruit yellowish. Herbaceous perennial.

Garden Angelica (*Archangelica officinalis*, Hoffm.).—Leaves and stems bright-green. Leaflets sessile, decurrent; terminal leaflet 3-fid. Calyx-teeth minute. Flowers white, in large terminal umbels of 30-40 rays. 2-6 ft. July. Herbaceous perennial.

ORDER COMPOSITÆ

Xanthium Strumarium, L.—Erect. Stem not spinose. Lower leaves heart-shaped, 3-lobed below, coarsely toothed. Flower-heads greenish. Involucle downy. Fruit oval, with two beaks, straight, hooked at tip. 1-2 ft. July. Herbaceous annual.

Xanthium spinosum, L.—Stem spinose. Leaves lanceolate, deeply lobed, pale below. Fruit with straight beak. 6-12 in. July. Herbaceous annual.

Crepis nicæensis, Balb.—Erect. Stem nearly leafless above; branches corymbose. Leaves ly-

rate, pinnatifid, hairy; caulinare arrow-shaped, clasping, upper lanceolate, entire. Flower-heads yellow. Flower-stalks and involucle glandular, hairy. Fruit oblong, hardly narrowed above, ribbed, rough, shorter than pappus. 1-3 ft. June. Herbaceous biennial.

ORDER BORAGINACEÆ

Lappula echinata, Gilib. (= *Echinospermum Lappula*, Lehm.).—Leaves sessile, bristly. Corolla pale-blue, salver-shaped. Calyx erect in fruit. Nutlet with a double row of prickles on the margin. 6-15 in. July. Herbaceous annual. Rare.

Prickly Comfrey (*Symphytum peregrinum*, Ledeb.).—Leaves very rough. Hairs with bulbous base. Flowers bluish-purple. 2-4 ft. June-August. Herbaceous perennial.

Borage (*Borago officinalis*, L.).—Erect. Bristly with bulbous hairs. Lower leaves obovate. Cauline leaves much narrowed towards the base, auricled. Flowers bright-blue. Anthers prominent, black. Corolla-lobes ovate, acute, spreading. 1-2 ft. June. Herbaceous biennial.

Italian Bugloss (*Echium italicum*, L.).—Very bristly. Stem simple. Leaves lanceolate. Flowers pink or white. Stamens twice as long as corolla. 1-2 ft. June-August. Herbaceous biennial. Rare.

ORDER SCROPHULARIACEÆ

Prostrate Toadflax (*Linaria supina*, Desf.).—Spreading or ascending. Leaves linear, blunt. Flowers yellow, racemed. Sepals linear, spoon-shaped. 1-5 in. July-September. Herbaceous annual. Naturalized in Devon and Cornwall.

Erinus alpinus, L.—Tufted. Leaves spoon-shaped, deeply toothed. Flowers violet-red, corymbose. 2-8 in. July. Herbaceous perennial. Rare.

ORDER LABIATÆ

Mentha cardiaea, Baker.—Smells of Basil and Spearmint. Nearly smooth. Stem-leaves sessile. Flowers purple-lilac. Bracts sessile, two to four times as long as crowded whorls of flowers. 1-2 ft. July-October. Herbaceous perennial. A hybrid.

Salvia verticillata, L.—Leaves triangular, coriaceous; lower auricled. Flowers bluish-purple, in many-flowered whorls. 1-2 ft. June-August. Herbaceous perennial.

ORDER PLANTAGINACEÆ

Plantago ramosa, Asch. (= *P. arenaria*, W. & K.).—Erect. Stem branched, leafy. Leaves opposite, linear. Flowers in a spike, on long stalks, greenish-white. 6-18 in. June-September. Herbaceous annual.

Plantago argentea, L.—Leaves linear, silky. Bracts obovate, blunt, silky. Scape erect, round in section. Spike round. 3-6 in. July. Herbaceous perennial.

ORDER CHENOPODIACEÆ

Strawberry Blite (*Chenopodium capitatum*,

BRITISH FLORA

Asch.—Leaves triangular-hastate, slightly toothed, smooth. Flowers in a naked spike. Fruit red, succulent, like a small strawberry. 6 in.-2 ft. July—September. Herbaceous annual.

Chenopodium leptophyllum, Nutt.—Differs from *C. album*, L., in smaller size and very narrow linear leaves.

Garden Orache (*Atriplex hortensis*, L.)—Erect. Leaves triangular-cordate, toothed, green, opaque. Calyx more or less rounded, entire. 1-3 ft. July—October. Herbaceous perennial.

ORDER POLYGONACEÆ

Polygonum cuspidatum, S. & Z.—Stoloniferous. Erect. Leaves broadly cordate, with long, narrow abrupt point. Flowers greenish-white. 3-6 ft. August. Herbaceous perennial. Japanese.

ORDER URTICACEÆ

Hemp (*Cannabis sativa*, L.)—Erect. Stems stout, furrowed, hairy, rigid, fibrous. Leaves opposite, stalked, digitate, toothed, rough, glandular. Flowers green. 1-3 ft. July—September. Herbaceous annual. Dioecious.

Roman Nettle (*Urtica pilulifera*, L.)—Leaves ovate, coarsely toothed. Flowers green, futile ones in globular heads. 1-3 ft. June—August. Herbaceous annual. Sting very venomous. Said to have been introduced by the Romans.

ORDER LILIACEÆ

Allium paradoxum, Don.—Leaves channelled, rolled inwards above. Scape leafy below. Flowers white. Corolla bell-shaped, with elliptic, blunt segments. 6-12 in. July. Herbaceous perennial. Siberian.

ORDER GRAMINACÆ

Finger Grass (*Panicum sanguinale*, L.)—Ascending. Leaves and sheaths hairy. Spikelets one-sided on digitate spikes. Flowering glumes awnless. 6-12 in. July. Herbaceous annual.

Millet Grass (*Panicum miliaceum*, L.)—Erect. Leaves large, soft. Panicle drooping, tinged with dark-brown. 1-2 ft. July—September. Herbaceous annual.

Phleum paniculatum, Huds.—Glumes wedge-shaped; lateral ribs not conspicuous. Panicle cylindrical, slender. 6-12 in. June. Herbaceous annual. Rare.

Bromus tectorum, L.—Erect. Stem downy. Awns short, as long as outer glumes. Flowers in

a one-sided panicle. Spikelets small. 9-15 in. June. Herbaceous annual. Rare.

Bromus squarrosus, L.—Panicle simple, drooping. Flowers nearly smooth, overlapping. Spikelets ovate-lanceolate, somewhat flattened. Lower palea 9-ribbed. Awn twisted, spreading. 1-2 ft. June—August. Herbaceous annual.

Bromus patulus, M. & K. (= *B. japonicus*, Thunb.)—Panicle compound, spreading, branches turned back finally. Spikelets lanceolate. Lower palea 7-ribbed. 9-15 in. June—August. Herbaceous annual.

MARSHERS, BOGS, ETC.

ORDER VIOLACEÆ

Large Bog Violet (*Viola montana*, L.)—Rootstock creeping. Leaves oblong-lanceolate, long, narrowed gradually from below. Flowers nearly circular, bluish-white or pale-blue. Spur green. 6-12 in. April—June. Herbaceous perennial. Fens, Hunts.

ORDER VACCINIACÆ

American Cranberry (*Oxycoccus macrocarpus*, Pers.)—Creeping. Leaves oblong; margins flat. Flowers red, lateral. Fruit large, globular. July. Perennial shrub. Flintshire bogs.

ORDER JUNCACEÆ

Obtuse-flowered Rush (*Juncus subnodulosus*, Schrank = *J. obtusiflorus*, Ehrh.)—Erect. Stem round in section. Leaves septate, hollow, round in section. Flowers in a spreading cyme with zigzag branches. Perianth-segments blunt, pale, as long as the narrow-pointed capsule. 1-3 ft. July. Herbaceous perennial.

ORDER CYPERACÆ

Brown Bog-rush (*Schoenus ferrugineus*, L.)—Tufted. Stems grooved. Spikelets 1-3, lateral, slender, nearly equaling the erect sheathing bracts. 4-8 in. June. Herbaceous perennial. Perthshire bogs.

Soft Brown Sedge (*Carex disticha*, Huds. = *C. intermedia*, Good.)—Soboles far-reaching. Stems erect, equaling leaves. Spike nearly unisexual. Spikelets in an oblong interrupted spike, in two rows. Upper and lower fertile, intermediate barren. Fruit ovoid-lanceolate, with narrow wing, longer than glumes. 1-2 ft. June. Herbaceous perennial.

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